

2010

2010-2011 Southern Illinois University Bulletin Carbondale Campus (Graduate Catalog)

Southern Illinois University Carbondale

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SOUTHERN ILLINOIS UNIVERSITY CARBONDALE

2010–2011 Graduate Catalog



Southern
Illinois University
Carbondale

This Catalog

Volume 51, June 2010

This catalog supersedes Volume 50, of the *Southern Illinois University Carbondale Bulletin*.

Graduate School Phone: 618-536-7791;

Web: www.gradschool.siuc.edu/

This publication provides information about Southern Illinois University, Carbondale. Primary attention is given to its academic programs, rules and regulations, and procedures. Students will be subject to the published requirements in effect when they are admitted to the Graduate School. Students beginning graduate work during the period of time from the start of summer session 2010 through spring semester 2011 are subject to the academic requirements of the Graduate School as specified in this publication. These requirements may be superseded by future publications of the Graduate Catalog. If the requirements are subsequently changed, students may elect either to meet the requirements in force in their particular degree programs immediately prior to the change, or to meet the new requirements. If they elect the former option they shall be guaranteed a minimum period of time from the date that the program requirements were changed within which minimum period they will be permitted to complete the old degree requirements.

This minimum period shall be determined by the department or other degree-program unit, subject to the following two constraints. First, the minimum period prescribed by the department may not exceed the standard Graduate School limitation that credit applied toward fulfillment of requirements for the master's degree must have been earned within a six-year period preceding the completion of the degree, and that doctoral students must complete degree requirements within five years after admission to candidacy. Second, the minimum period shall encompass no less than two years for master's degree students and three years for doctoral students, with the exception that students in the last stage of their degree work when requirements change (a master's student who has completed all requirements except the thesis or research report and the final examination or a doctoral student who has been admitted to Ph.D. candidacy) shall not be subject to the new requirements but may complete their degrees within the standard Graduate School limitations stated above. Students who elect to follow old requirements, but do not complete their work within the minimum period prescribed by the department, shall, unless they were in the last stage of their degree work when requirements changed, be subject to requirements in force at the time they complete their degrees, and shall be subject to the standard Graduate School limitations de-

scribed above. The University reserves the right to change information contained herein on matters other than curricular requirements without notice when circumstances warrant such action.

Affirmative Action Policy

It is the policy of Southern Illinois University Carbondale to provide equal employment and educational opportunities for all qualified persons without regard to race, color, religion, sex, national origin, age, disability, status as a disabled veteran or a veteran of the Vietnam era, sexual orientation, or marital status. The university is committed to the principles of equal employment opportunity and affirmative action and will continue to conduct all personnel actions in accordance with the letter and spirit of applicable state and federal statutes and regulations, including Executive Order 11246 as amended. Personnel actions include, but are not limited to, recruitment, hiring, position assignments, compensation, training, promotion, tenure consideration and award, retention, lay-off, termination, and benefits.

The university recognizes that the barriers of race, color, religion, sex, national origin, age, disability, status as a disabled veteran or a veteran of the Vietnam era, sexual orientation, or marital status of some individuals have resulted in their denial of full participation in all societal functions and is, therefore, committed to taking affirmative steps aimed at overcoming such historical patterns of discrimination in our society. The university's affirmative action program identifies special actions intended to bring such groups into full participation in all aspects of university life. Through its affirmative action program, Southern Illinois University Carbondale is committed to:

- increased numbers of minorities and females in all aspects of SIUC employment with special procedures applicable to those positions determined to be underutilized for minorities and females;
- cultural and educational diversity in the curriculum and environment of the university;
- removal of barriers to the disabled;
- support of the principles of equal opportunity and affirmative action in an effort to redress the consequences of past societal discrimination and to maintain a positive non-discriminatory educational environment.

The responsibility for coordinating and monitoring compliance with the university's equal employment opportunity/affirmative action policies is assigned to the

University Affirmative Action Officer. Implementing and assuring compliance with these policies is the responsibility of the Associate Chancellor (Diversity) and each vice chancellor. In addition, each dean, director, or other staff member involved in the recruitment and hiring process must ensure compliance with the spirit as well as letter of the policies and procedures. Many involved in the staff selection process assume that others are responsible for the success of the affirmative action program. It is a basic assumption of SIUC's Affirmative Action Office that all administrative levels and especially deans, directors, chairs, faculty and all hiring administrators are responsible for fostering and enhancing institutional diversity. The initiating hiring officer has the primary responsibility for maintaining the integrity of these affirmative action policies and procedures and is ultimately accountable for attaining diversity within his or her staff.

The responsibility for coordinating and monitoring compliance with the University's Equal Employment Opportunity/Affirmative Action policies is assigned to the Associate Chancellor (Diversity). Implementing and assuring compliance with this policy is the responsibility of all academic and administrative units.

The University's ADA, §504, Title IX and Sexual Harassment coordinator is Linda McCabe Smith, Associate Chancellor (Diversity), 110 Anthony Hall, Mail Code 4341, Southern Illinois University Carbondale, 1265 Lincoln Drive, Carbondale, IL 62901. Phone: (618) 453-1186. (<http://policies.siu.edu/policies/aaeo.html>)

Southern Illinois University

Southern Illinois University has entered its second hundred years of teaching, research, and service. At the outset of the 1970's, Southern Illinois University became a single state system with two universities: Southern Illinois University Carbondale and Southern Illinois University Edwardsville. Southern Illinois University Carbondale also has a medical school campus at Springfield.

Southern Illinois University Carbondale (SIUC) first operated as a two-year normal school but in 1904 became a four-year, degree-granting institution. In 1943 SIUC was transformed from a teacher-training institution into a university, thus giving official recognition to the area's demand for diversified training and service. Graduate work was instituted in 1943, with the first doctoral degrees granted in 1959. There has been diversification and expansion of graduate programs across the University through the Colleges of Agricultural Sciences, Applied Sciences and Arts, Business, Education and Human Services, Engineering, Law School, Liberal Arts, Mass Communication and Media Arts, Science, and the School of Medicine. Combined, these colleges presently offer approximately 90 graduate degree programs.

In keeping with the state's master plan, and with a commitment to enhance its Carnegie Doctoral/Research-

Extensive University status, the University's objective is to provide a comprehensive educational program meeting as many individual student needs as possible. While providing excellent instruction in a broad range of traditional programs, it also helps individual students design special programs when their interests are directed toward more individualized curricula. The University comprises a faculty and the facilities to offer general and professional training ranging from two-year associate degrees to doctoral programs, as well as certificate and non-degree programs meeting the needs of persons not interested in degree education.

Enrollment

In fall semester 2009, out of a total enrollment of 20,350, SIUC had 4113 and 686 registered graduate and professional students respectively.

Location

Carbondale is approximately 100 miles southeast of St. Louis, Missouri. Immediately south of Carbondale begins some of the most rugged and picturesque terrain in Illinois. Sixty miles to the south is the historic confluence of the Ohio and Mississippi rivers, the two forming the border of the southern tip of Little Egypt, the fourteen southernmost counties in Illinois. Within ten miles of the campus are located two state parks and four recreational lakes and much of the area is a part of the 263,000 acre Shawnee National Forest.

Campus

The Carbondale campus, comprising more than 3,290 acres, has developed a 981 acre portion with woods and a lake as a site for its academic buildings and residence halls. The buildings are located in wooded tracts along two circular shaped campus drives, named for Lincoln and Douglas.

The Graduate School

The primary concerns of the Graduate School are graduate instruction and research. The Graduate School therefore plays an essential role in development of instructional and research programs, in acquisition of funds, and in procurement of facilities necessary to encourage and support research by members of its scholarly community. Through faculty, staff, and students the Graduate School makes its contribution to the public welfare of the region, state, nation, and international community.

The Graduate School offers master's degrees in over sixty programs and the doctoral degree in over thirty programs. Graduate students pursue advanced study and research under the leadership of a graduate faculty of 888 members. In addition, the Schools of Law and Medicine provide graduate students with additional opportunities in instruction and research. The Graduate School administers programs in the Colleges of Agricultural Sciences, Applied

Sciences and Arts, Business, Education and Human Services, Engineering, Law School, Liberal Arts, Mass Communication and Media Arts, Science, and the School of Medicine.

Within these colleges and schools are departments whose distinguished faculty offer inspired teaching, conduct innovative research, and facilitate student services from admission to placement. The University has an excellent

library and has a very good computing facility. For further information, see Academic Resources elsewhere in this chapter. In addition to the excellent research conducted in the colleges and schools, SIUC operates a number of research and service centers, most of which have been established with the aid of outside funding. These centers also are described under Academic Resources

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University Calendar

All breaks officially begin at 10:00 o'clock the night before, and end at 7:30 the morning after, the respective beginning and ending dates listed unless otherwise noted.

Summer Session 2010—

Eight-Week Session Begins..... Monday, June 14,
..... 7:30A.M.
Deadline to Apply for
Graduation Friday, June 26
Deadline to Drop an 8-Week Class
and Receive a Refund
..... Friday, June 26
Independence Day Holiday Friday, July 3
Deadline to Drop an 8-Week
Class Monday, July 6
Final Examinations Thursday/Friday,
..... August 6 & 7
Commencement Saturday, August 8 & 9

Fall Semester 2010—

Semester Classes Begin..... Monday, August 23
Deadline to Apply for
Graduation Friday, September 4
Deadline to Drop a Class and
Receive a Refund..... Friday, September 4
Labor Day Holiday..... Monday, September 6
Deadline to Drop a Class Monday, October 19
Veteran's Day..... Tuesday, November 11
Thanksgiving Vacation Noon Saturday–Sunday,
..... Nov. 20-28
Final Examinations Monday–Friday,
..... December 13-17
Commencement..... Saturday, December 18

Spring Semester 2011—

Martin Luther King, Jr.'s
Birthday Holiday Monday, January 17
Semester Classes Begin Tuesday, January 18
Deadline to Apply for
Graduation Friday, January 22
Deadline to Drop a Class
and Receive a Refund Friday, January 22
Deadline to Drop a Class Monday, March 15
Spring Vacation Noon Saturday–
..... Sunday, March 12-20
Final Examinations Monday–Friday,
..... May 9-13
Commencement Friday–Saturday,
..... May 13-14

Excused Absences for Religious Holidays. Students absent from classes because of required observances of major religious holidays will be excused. It is the student's responsibility to notify in advance the instructor of each class that will be missed. Students must also take the responsibility for making up work missed.

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Graduate Degrees Offered

The Graduate School offers the Master's, Master of Fine Arts, and Doctor of Philosophy degrees. In several of the programs listed below, one or more concentrations are available.

Master's Degrees

Master's degrees are available in the approved programs listed below:

ABBREVIATIONS

Master of Accountancy, M.Acc.

Master of Architecture M.ARCH.

Master of Arts, M.A.

Master of Arts in Teaching, M.A.T.

Master of Business Administration, M.B.A.

Master of Engineering, M.E.

Master of Legal Studies, M.L.S.

Master of Music, M.M.

Master of Public Administration, M.P.A.

Master of Public Health, M.P.H.

Master of Science, M.S.

Master of Science in Education, M.S.Ed.

Master of Science in Physican Assistant, M.S.P.A.

Master of Social Work, M.S.W.

Professional Science Masters, P.S.M.

Accountancy M.Acc.

Information Systems

Taxation

Advanced Energy and Fuels Management... P.S.M.

Agribusiness Economics M.S.

Agribusiness Economics

Agricultural Services

Animal Science M.S.

Anthropology M.A.

Applied Linguistics M.A.

Architecture M.ARCH.

Behavior Analysis and Therapy M.S.

Biological Sciences M.S.

Biomedical Engineering M.S., M.E.

Business Administration M.B.A.

Change Management

Finance

International Business

Management Information Systems

Marketing

Chemistry M.S.

Civil Engineering M.S.

Civil and Environmental Engineering M.E.

Communication Disorders and Sciences M.S.

Community Health Education M.P.H.

Computer Science M.S.

Criminology and Criminal Justice M.A.

Curriculum and Instruction M.S.Ed

Curriculum and Instruction

Secondary Education M.A.T.

Economics M.A., M.S.

Educational Administration M.S.Ed.

Educational Psychology M.S.Ed.

Counselor Education

Educational Psychology

Electrical and Computer Engineering M.S.

English M.A.

Literature

Rhetoric and Composition

Food and Nutrition M.S.

Foreign Languages and Literatures M.A.

French

Spanish

Forestry M.S.

Forest Resource Management

Outdoor Recreation Resource Management

Wood Science and Technology

Geography and Environmental Resources M.S.

Environmental Resources

Geographic Information Science (GIS)

Water Resources Management

Geology M.A., M.S.

Health Education M.S.Ed.

Higher Education M.S.Ed.

College Student Personnel

Community College Teaching

History M.A.

American

European

Latin American

Kinesiology M.S.Ed.

Legal Studies M.L.S.

Manufacturing Systems M.S.

Mass Communication and Media Arts.

Media Theory and Research M.A.

Professional Media & Media Management . M.S.

Mathematics M.A., M.S.

Mathematics and Science Education M.S.

Mechanical Engineering and

Energy Processes M.S.

Medical Dosimetry M.S.

Mining Engineering M.S.

Molecular Biology, Microbiology

and Biochemistry M.S.

Molecular, Cellular,

and Systemic Physiology M.S.

Music M.M.

Collaborative Piano

Music Education

Music History and Literature

Music Theory and Composition

Opera-Music Theater

Performance

Piano Pedagogy

Pharmacology and Neuroscience M.S.

Philosophy	M.A.	Public Administration	M.P.A.
Physician Assistant	M.S.P.A.	Aviation Administration	
Physics	M.S.	Recreation	M.S.Ed.
Plant Biology	M.S.	Rehabilitation Administration	
Plant Soil and Agricultural Systems	M.S.	and Services	M.S.
Crop Science		Rehabilitation Counseling	M.S.
Horticultural Science		Social Work	M.S.W.
Soil Science		Sociology	M.A.
Political Science	M.A.	Special Education	M.S.Ed.
Aviation Administration		Speech Communication	M.A.
Psychology	M.A., M.S.	Teaching English to Speakers of Other Languages	M.A.
Applied		Workforce Education	
Brain and Cognitive Sciences		and Development	M.S.Ed.
Clinical		Zoology	M.S.
Counseling			

Note: See Mass Communication and Media Arts for Cinema and Photography, Interactive Multimedia Journalism, and Telecommunications.
 See Kinesiology for Physical Education.
 See Molecular, Cellular, and Systemic Physiology for Physiology

Master of Fine Arts Degree

Master of Fine Arts (M.F.A.) degree programs are available in the fields below:

Art
 Creative Writing
 Mass Communication and Media Arts
 Theater

Doctoral Degrees

Doctor of Philosophy (Ph.D.) degree programs are available in the fields listed below along with the approved concentrations:

Agricultural Sciences	Health Education
Anthropology	Historical Studies
Applied Physics	Mass Communication and Media Arts
Business Administration	Mathematics
Chemistry	Molecular Biology, Microbiology, and Biochemistry
Computer Science	Molecular, Cellular, and Systemic Physiology
Curriculum and Instruction	Pharmacology and Neuroscience
Economics	Philosophy
Educational Administration	Plant Biology
Educational Psychology	Political Science
Electrical and Computer Engineering	Psychology
Engineering Science	Clinical
English	Counseling
Environmental Resources and Policy	Experimental
Earth and Environmental Processes	Rehabilitation
Energy and Mineral Resources	Sociology
Environmental Policy and Administration	Speech Communication
Forestry, Agricultural, and Rural Land Resources	Workforce Education and Development
Geographic Information Systems, Remote Sensing	Zoology
and Environmental Modeling	
Water Resources	

Note: See Environmental Resources and Policy for Geography and Geology.
 See Mass Communication and Media Arts for Journalism.
 See Molecular, Cellular, and Systemic Physiology for Physiology

Certificate Programs

The purpose of a graduate certificate is to enhance marketability of students, confirm special skills or knowledge acquired by students, and provide educational opportunities and continuing education to otherwise unserved segments of the community through short term graduate programs. The certificate program is designed to provide a certification of specialization to individuals who already possess a bachelor's degree. While a certificate does not lead to a degree, one-half of the certificate hours, up to a maximum of 9 hours, can be counted toward a graduate degree program. All students must be admitted to the Graduate School and make formal application to the particular certificate program.

Certificate programs have been approved for the following:

Certificate in Addiction Studies

The Post-Baccalaureate Certificate in Addiction Studies, housed in the Rehabilitation Counseling and Administration Program in the Rehabilitation Institute, is open to graduate students interested in developing proficiency in addiction treatment and in certification as a drug and alcohol counselor. Students must complete 20 credits of required coursework including an academic discipline-based 500 hour internship (8 credits). Didactic courses include REHB 461, 471, 558, and 566.

For more information contact:

D. Shane Koch, Rh.D., CRC,CSADC, CAADC
Rehabilitation Counseling and Administration Program
Southern Illinois University Carbondale
Rehn Hall—Mail Code 4609
1025 Lincoln Dr.
Carbondale, IL 62901-4609
Telephone: 453-8263
Email: dskoch@siu.edu

Certificate in Anatomy

The purpose of the anatomy certificate is to allow graduate students to become proficient in anatomy teaching. This will allow them to compete more effectively for jobs in this field. Students are eligible for the anatomy certificate if they are in an existing anatomically-based master's or Ph.D. program (e.g. Physiology, Anthropology, or Zoology). Additional prerequisites (e.g., embryology, basic vertebrate anatomy) are preferred. Students lacking such prerequisites will be encouraged to obtain them prior to admission into the anatomy certificate program. The Graduate Program Committee of the Department of Physiology will review all applications. In addition to graduate coursework in anatomy, students in the anatomy certificate program will obtain experience teaching gross anatomy to undergraduates and medical students. A minimum of 17-18 graduate credit hours are required for

fulfillment of the certificate requirements. They are: Advanced Human Anatomy, (PHSL 401a,b, 10 hours), Histology, (ZOOL 409, 4 hours) and either Neuroanatomy, (PHSL 573, 3 hours) or Comparative Vertebrate Anatomy, (ZOOL 418, 4 hours). Where appropriate, these courses may also count for credit toward the master's or Ph.D. degree. The Graduate Program Committee in the Department and the student's advisory committee will make recommendations for other coursework and oversee the student's progress. Students supported by assistantships will have the same teaching obligations as all other departmentally supported students. Students will be required to teach at least two semesters of gross anatomy assisting Physiology and Anatomy Department faculty in the Medical School.

For more information, contact:

Chairman of the Graduate Program Committee
Department of Physiology, School of Medicine
Southern Illinois University Carbondale
Carbondale, IL 62901-6512
Telephone: 618-453-1544
Email: physiology@siumed.edu

Certificate in Art History

The Graduate Certificate in Art History will enable students to develop a broad knowledge of the history of art, become familiar with the discipline's methodology, and acquire skills necessary for teaching art history. It is open to students who have completed a bachelor's degree. Students enrolled in the MFA program offered through the School of Art and Design may enroll concurrently in the certificate program and apply part of their MFA art history coursework towards both degrees. The program requires students to complete 21 credit hours of graduate level art history coursework, including a teaching practicum, and to pass a comprehensive qualifying exam designed to assess general knowledge of art history.

For more information, contact:

Elina Gertsman, Coordinator, Graduate Certificate in Art History
School of Art and Design
Southern Illinois University Carbondale
Mail Code 4301
Carbondale, IL 62901
Telephone: (618) 453-8633
E-Mail: gertsman@siu.edu

Certificate In Conflict Resolution

The Certificate in Conflict Resolution is open to post-baccalaureate students interested in working in educational settings with youth and other individuals. The focus is on developing knowledge and skills associated with conflict mediation and resolution. The core courses within the

certificate program include, but are not limited to: cultural diversity, interpersonal communication, conflict resolution, and counseling skill development. Coursework also includes a required practicum. Students must complete 18 semester hours of study (8-9 hours of core requirements and 6-7 hours of electives including a minimum of 3 hours of practicum or individual study).

For more information contact:

Jenise Wilson, Advisor

Academic Advisement Office

College of Education and Human Services

Southern Illinois University Carbondale

Carbondale, IL 62901-4601

Telephone: (618) 453-6315

E-Mail: jwilson@siu.edu

Certificate in Earth Science

The Certificate in Earth Science with an optional concentration in Geospatial Analysis or Environmental Geology is open to post baccalaureate students with degrees in earth science, geology, or related fields. It is intended to expand the knowledge, skills, and specialized training in geological topics. The coursework will include eighteen (18) graduate credit hours in Geology. While there are no specific courses required, the courses taken will be determined by the student and the departmental Coordinating Committee.

For more information, contact:

Ken Anderson, Geology Graduate Program Coordinator
Department of Geology

Southern Illinois University Carbondale

Carbondale, IL 62901-4324

Telephone: (618) 453-7389 or 453-3351

E-mail: kanderson@geo.siu.edu or

geology@geo.siu.edu

Certificate in Gerontology

The Graduate Certificate in Gerontology is open to post-bachelor level students who are interested in the area of gerontology. It is designed to provide knowledge, skills, and specialized training in programs and services for older persons. The certificate includes core courses on aging in the following areas: social work, rehabilitation, health, exercise and education. Courses within the certification program will include, but not be limited to: policy and program issues, psychosocial issues and health and fitness issues. The coursework also includes a practicum in an agency suitable to the individual's interest. Students must complete 18 semester hours of study including a minimum of three hours of practicum, to earn the certificate.

For more information contact:

Dr. Juliane P. Wallace, Coordinator, Certificate in Gerontology

College of Education and Human Services

Southern Illinois University Carbondale

119 Davies Hall,

Carbondale, IL 62901-4310

Telephone: (618) 453-3124

E-mail: juliane@siu.edu

Certificate in Plant Ecology

The Graduate Certificate in Plant Ecology provides specialized training in plant ecology for post-bachelor level students, particularly Master's students, in both basic and applied ecology, including forestry and wildlife. The program prepares students for the Associate Ecologist Certification of the Ecological Society of America (ESA). The program requires 15 to 18 hours of coursework, 50% of which may also count toward a regular degree in some graduate program (given approval by that program and the student's advisory committee). Students must take as many courses as necessary from the following list to satisfy the ESA's sub-discipline requirements of population, community and ecosystem ecology: PLB 452a and b, PLB 545a and b, PLB 440, PLB 443, PLB 445, and PLB 444. Courses from other universities of up to two (2) courses in the list may be substituted with permission from the student's advisory committee. Students must have had in their program a minimum of two courses in statistics, including inferential statistics, or take these as deficiencies. One elective ecology course in an applied area, e.g., forestry, geography, wildlife biology, soils, is required. One-year of post-graduate experience in research or development of methods demonstrating technical competence in the application of ecological principles and/or theory to decision making is required. This research competence will be accomplished through the research experience at the Master's level. If applicants for the Certificate come into the program from industry, private consulting firms or government agencies, they will be required to take three (3) credit hours of independent research to gain this competence. A background of 12 semester hours in mathematics and physical sciences is required. Students must have a B average in graduate courses and must follow all rules of the Certification Policy established by the Graduate School. Residency must be at least one semester for those coming into the program just to obtain the certificate. Master's students can satisfy the residency by simply fulfilling the coursework requirements. An assessment instrument will be administered to students during the last semester of their program for final certification. An application for Associate Ecologist Certification with the ESA will be prepared and submitted on behalf of Candidates obtaining the Certificate.

For more information and detailed Certificate requirements contact:

David J. Gibson, Coordinator, Graduate Certificate in Plant Ecology

Department of Plant Biology

Southern Illinois University Carbondale

Carbondale, IL 62901-6509

Telephone: (618) 453-3231

E-mail: djgibson@plant.siu.edu

Certificate in Women's Studies

The purpose of the Women's Studies certificate is to meet the demand for formal recognition of graduate level Women's Studies academic preparation; enhance preparation for job opportunities with Women's Studies credentials; enhance and broaden the perspectives of graduate students from various related fields; and serve interested community members not pursuing a graduate degree, but interested in the specialty area of Women's Studies. The program requires 18 hours of coursework and independent study. This includes: 1) nine hours of required coursework selected from an interdisciplinary grouping of 500 level courses (WMST 515/SPCM 515, WMST 544/SOC 544, WMST 550/PSYC 550, WMST 353/EAHE 535i, WMST 560/KIN 560, WMST 591, or other 500 level course as approved by the Director of Women's Studies); and 2) nine hours of electives including three hours of independent graduate readings. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared).

For more information, contact:

Women's Studies Director

Department of Women's Studies

Southern Illinois University Carbondale

Carbondale, IL 62901-6518

Telephone: (618) 453-5141

Student Responsibility

Students are responsible for knowing degree requirements and enrolling in courses that will enable them to complete their degree programs. It is also their responsibility to know the University regulations for the standard of work required to continue in the Graduate School. For information, consult both the general and specific degree requirements enclosed in this publication. Additional details about requirements and procedures are available from your graduate adviser or the Graduate School.

Human Subjects

Before the start of any research involving human subjects, the research project must be reviewed and approved by the SIUC Human Subjects Committee (an institutional review board). If your master's or doctoral project will involve human subjects (including administering questionnaires, conducting interviews, or accessing confidential databases), you must submit an application to the committee *prior* to the start of the research. Call 618-453-4533 for information and application materials or visit their website at www.orda.siu.edu/human. When you submit your master's thesis /research paper or doctoral dissertation to the Graduate School, you must include Form A indicating that your project has been reviewed and approved by the committee. If this form is not included, your master's research paper/thesis or doctoral dissertation cannot be accepted by the Graduate School.

Animal Care

The SIUC Institutional Animal Care and Use Committee was formed to establish and enforce ethical, humane guidelines for the use of live animals in research at the University. The committee reviews all protocols involving the use of vertebrate animals for training, research, and testing to assure compliance with humane standards and federal regulations. Researchers with projects involving animals must submit a completed *Animal Use Protocol* form for the committee's review. Approval of the protocol is required before the animals can be used for training, research, or testing purposes. The Laboratory Animal Program is accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International. For more information, contact the Institutional Animal Care and Use Committee at 618-453-4533 or the Laboratory Animal Program at 618-536-2346 or visit the website at www.iacuc.siu.edu.

Hazardous Materials

Faculty, staff, and students conducting projects that involve hazardous biological materials (including recombinant DNA), radiological materials, or hazardous chemical materials must have prior approval and must comply with all relevant government regulations. Contact SIUC's Center for Environmental Health and Safety (618-453-7180), which monitors compliance and oversees the Institutional Biosafety, Radiological Control, and Chemical Oversight Advisory Committees, or visit the website at www.cehs.siu.edu.

Stem Cell Research

Human stem cell research at SIUC, regardless of funding source, must be approved by the Stem Cell Research Oversight (SCRO) Committee before the research can begin. Review by the SCRO Committee does not supplant review by other relevant review committees; The SCRO Committee has final approval over stem cell projects. The policy and procedures can be found at <http://www.orda.siu.edu/compliances/stemcells.html>. For more information, contact the SCRO Committee at 618-453-4533.

Degree Requirements

The following section describes Graduate School regulations unique to the master's and the doctoral degrees. For Graduate School procedures and regulations applicable to all graduate students, regardless of degree program, the student should consult the section titled "General Regulations and Procedures". For information about specific degree programs, the student should consult the departmental degree program description.

MASTER'S DEGREE PROGRAM

Requirements and admission policies for applicants to a master's degree program are elaborated on in the following paragraphs.

Admission

In order to be admitted to a degree program, an applicant must meet Graduate School admission requirements and be approved by the department or degree program concerned.

The Graduate School requires that the applicant hold a bachelor's degree from an accredited institution or have completed all undergraduate degree requirements prior to the beginning of the classes for the term for which admission is sought. The applicant must have earned a grade point average (GPA) of 2.70 or better ($A = 4.00$) on approximately the last 60 semester hours of undergraduate coursework. Applicants to master's degree level study may begin the admissions process when they need no more than 32 semester hours beyond the credit shown on their transcript at the time of application to complete all requirements for the bachelor's degree.

An applicant who is a U.S. citizen or permanent resident and whose GPA is below 2.70 may be admitted as a nondeclared student and may later apply to a degree program when 12 or more graduate semester hours of graded graduate work at SIUC have been completed. A minimum GPA of 3.00 is required in courses for which grades of *A*, *B*, *C*, *D*, *F* have been assigned.

Any applicant who has completed 12 or more semester hours of graded graduate work at an accredited U.S. educational institution, and who has a GPA of 3.00 or better on all graduate work, may be exempted from the 2.7 undergraduate grade point average requirement.

Any student with fewer than 12 hours of graduate work may be admitted to the Graduate School on the basis of undergraduate GPA only.

General Requirements

Graduate credit earned in graduate courses for which the student has received grades of *A*, *B*, *C*, or *S*, and only such credit, is acceptable for master's degree programs. At least 21 semester hours of graduate credit with grades of *A*, *B*, or *C* must be earned in courses graded *A* through *F*. An

overall grade point average of at least 3.00 in all graduate work is required before the degree can be awarded.

The Graduate School requires a minimum of 30 semester hours of acceptable graduate credit for the master's degree. Since certain degree programs require more than 30 hours, the student should consult the description of the appropriate program for specific requirements. No more than half of the credit applied toward fulfillment of the master's degree requirements may be earned at other universities and transferred to SIUC.

At least nine hours of coursework must be earned in courses taught on the Carbondale campus or in an approved residency center and at least nine hours of credit must be earned after admission to the degree program.

In addition, a minimum of fifteen hours in courses numbered 500 or above must be earned at SIUC.

Candidates for a master's degree are required to pass a comprehensive examination covering all of their graduate work, including the thesis. This examination may be written or oral, or both, as determined by the student's advisory committee.

Time Limits

A student has six calendar years to complete the degree. This time is calculated from initial enrollment to completion of all degree requirements including any document that must be approved by the Graduate School. This time limit includes courses taken either at SIUC or elsewhere. All students must remain registered until completion of their degrees. See section "Continuing Enrollment Requirement".

Thesis

Each candidate for a master's degree shall write a thesis except where a graduate program has been approved to provide some other arrangement, such as a research paper. The thesis shall be supervised by a committee of at least three members of the graduate faculty and may be counted for not more than six nor less than three semester hours of credit. Only members of the committee may vote or make recommendations concerning acceptance of the thesis and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception not to include the committee chair, judge both the thesis and the performance at the final oral examination to be satisfactory. In cases where a committee of more than three has been approved, the requirement of not more than one negative vote will still apply.

All students admitted in a graduate program must continuously enroll except for summer. The enrollment can be in classes or in Continuing Enrollment 601.

An electronic pdf version of the approved thesis must be presented to the Graduate School by the stated deadline

date. There is a fee of \$80.00 to cover the cost of publication of the abstract and microfilming of the thesis. If copyright is desired, an additional fee of \$55.00 will be required.

For non-thesis programs, a research paper should show evidence of the student's knowledge of research techniques and should be based on a special project or specific courses as may be recommended by the advisory committee. An electronic copy of the research paper must be filed in the Graduate School by submission at Open SIUC by the stated deadline date. Departments with a non-paper option for a Master's degree, will have other requirements.

Double Major for a Master's Degree

A student may earn a double major for a master's degree if such a program of graduate study is commensurate with the student's vocational and professional goals.

A student interested in pursuing a double major for a master's degree must submit to the graduate dean the program of study endorsed by the chairman of both of the cooperating units. The forms for submitting a double major program of study are available in the Graduate School Admissions Office, Woody Hall B103; Graduate Records, Woody B116; or online at

<http://www.gradschool.siuc.edu/DoubleMajor.pdf>.

Requirements:

1. The student must have been admitted to one master's degree program.
2. Each unit in which the student wishes to earn a major must have an approved master's degree program.
3. The chair of each unit must endorse the proposed program.
4. The proposed program must specify the title of the degree which is to be awarded.
5. The proposed program must be approved by the graduate dean.
6. At least 18 semester hours must be earned for each major, and one-half of the required coursework for each major must be in courses numbered 500 or above.
7. The minimum number of hours required for the double major must total 60 percent of the sum of the total required for the two majors individually.
8. The thesis may be counted for not more than a combined total of 6 nor less than 3 semester hours of credit.

Second Master's Degree

A student may earn a second master's degree if the second degree is offered by an academic unit different from that of the first master's degree. None of the hours used towards any previous degree will be allowed to count as a part of the total number of hours toward a second master's, and all regulations shall apply to the second master's degree exactly as they would if this were a first master's degree.

Concurrent Master's Degrees Program

A concurrent master's degrees program permits students to be enrolled at the same time in two academic departments which have an approved concurrent degrees arrangement with each other, and earn two master's degrees.

Academic departments, upon approval of the Graduate Council, may establish a concurrent degrees program. Concurrent master's degrees programs will only be approved if they can be shown to enhance graduate students' educational experiences and professional opportunities. Furthermore, concurrent degrees programs must meet the following requirements:

1. Students must obtain admission to both academic departments, and must be formally admitted to the concurrent degrees program prior to completion of the master's degree requirements for either of the participating academic departments;
2. Students are required to complete all core requirements of each master's program;
3. Students are required to earn no less than 80 percent of the total number of semester hours required in the master's degree programs of each of the participating academic units. A total of nine hours may be shared.

Concurrent Master's Degrees Programs

- Agribusiness Economics and Business Administration (MS / MBA)
- Mass Communication and Media Arts and Business Administration (MA / MBA)

Concurrent Master's and Law Degrees Programs

- Accountancy and Law (JD / M.Acc.)
- Business Administration and Law (JD / MBA)
- Education and Law (JD / MSED)
- Electrical & Computer Engineering and Law (JD / MS)
- Public Administration and Law (JD / MPA)
- Social Work and Law (JD / MSW)

Summary of Master's Degree Requirements

- At least 30 hours of graduate credit, or the minimum number of hours required by the specific degree program.
- Grade point average of at least 3.00.
- At least 15 hours in courses numbered 500 or above, which must be completed at SIUC.
- At least 9 hours after admission to the degree program.
- At least 9 hours taught on the Carbondale campus or in an approved residency center.
- At least 21 hours of graduate coursework graded A, B, or C.
- At least one-half of the required number of hours earned at SIUC.
- Courses to be applied to the degree taken within six years of conferring the degree.

- Transfer credit taken at another institution or as a nondeclared student approved by the dean of the Graduate School.
- Electronic submission of an approved thesis (pdf version) or an approved research paper (pdf version) (not applicable for M.B.A., M.Acc., or M.S.W. programs, and non-paper options).
- Comprehensive or oral examination.
- Submission of departmental clearance form.
- Register for 601 Continuing Enrollment, as required.

DOCTORAL DEGREE PROGRAM

Admission

Admission to a doctoral program in the Graduate School normally requires a master's degree or its equivalent, a grade point average in graduate work of at least 3.25, and acceptance by the academic unit offering the doctoral program. Faculty of a degree program-unit may add its own grade point average requirements (above the Graduate School minima) for admission to that particular program. An applicant to doctoral level study may begin the admission process when the applicant needs no more than 16 additional semester hours (24 quarter hours) beyond the credits shown on the transcript at the time of application to complete all requirements for the master's degree. The graduate dean informs each student of any conditions for admission imposed by the Graduate School or by the academic unit.

Direct Entry into a Doctoral Program

Direct entry is possible into previously approved doctoral programs upon recommendation of the department and acceptance by the Graduate School. Applicants with exceptional research potential or outstanding academic preparation may have the option to enter a doctoral program after completion of a bachelor's degree only. No previous course work at the graduate level is allowed. The program must be approved for direct entry and the student must have at least a 3.25 GPA on approximately the last two years of undergraduate course work.

Accelerated Entry into a Doctoral Program – for SIUC Graduate Students

Students currently enrolled in a master's program at SIUC may be considered for Accelerated Entry into previously approved doctoral programs, upon the recommendation of the department and acceptance by the Graduate School. At least one semester of course work must have been completed in a master's program at SIUC, and a minimum grade point average of at least 3.25 must have been earned in all graduate course work (this includes graduate course work completed at other institutions). Course work completed in a masters degree program cannot be counted toward residency requirements for a doctoral program.

Accelerated Entry into a Doctoral Program – for Non-SIUC Graduate Students

Students enrolled in a master's program at a U.S. educational institution other than SIUC may also be considered for Accelerated Entry into previously approved doctoral programs, upon the recommendation of the department and acceptance by the Graduate School. At least one semester of course work must have been completed in a master's program at another institution, and a minimum grade point average of at least 3.25 must have been earned in all graduate course work.

SIUC Departments with Graduate School Approved Direct Entry and Accelerated Entry

DEPARTMENT	DIRECT ENTRY	ACCELERATED ENTRY
Anthropology	Yes	Yes
Applied Physics	Yes	Yes
Business Administration	Yes	Yes
Chemistry	Yes	Yes
Computer Science	Yes	Yes
Economics	No	Yes
Electrical & Computer Engineering	Yes	Yes
Engineering Science	No	Yes
English	No	Yes
History	Yes	Yes
Molecular Biology, Microbiology, and Biochemistry	Yes	Yes
Molecular, Cellular and Systemic Physiology	Yes	Yes
Pharmacology & Neuroscience	Yes	Yes
Philosophy	Yes	Yes
Plant Biology	Yes	Yes
Political Science	Yes	Yes
Psychology	No	Yes
Rehabilitation	Yes	Yes
Sociology	No	Yes
Speech Communication	Yes	No
Zoology	Yes	Yes

General Requirements

The doctoral degree is awarded for high accomplishment in a particular discipline or a recognized interdisciplinary area, as measured by the student's ability to pass the preliminary examination for admission to candidacy, meet the research tool requirement of the program, perform a piece of original research, present the results in proper form in a dissertation, and defend the dissertation before a faculty committee. Except for the hours required to meet residency and required 24 hours of dissertation, there is no Graduate School requirement that a certain number of semester hours be taken for the doctorate although some degree programs do require a certain number of semester hours. Graduate work completed at another institution may be eligible for transfer to the student's doctoral program, subject to Graduate School regulations regarding transfer of credit and acceptance by the student's major department.

No doctoral level residence-credit program may be established off campus, although coursework involved in a

doctoral program may be taken at an off-campus residence center provided that the full, normal requirement of residence on campus at SIUC is met under the usual Graduate School standards for doctoral programs. However, established cooperative programs with SIUC and SIUE permits students to be enrolled in courses and earn credits either at SIUC or SIUE.

Preliminary Examination

The student will generally prepare for this examination through independent study and coursework, as advised by the faculty of the doctoral program. The examination is given to determine the breadth and depth of the student's knowledge within the discipline. The particular form and content of the examination are determined by the faculty of each of the doctoral programs. The student will be permitted to take the preliminary examination at the discretion of the department, after having completed two years of full-time study or its equivalent beyond the baccalaureate.

Research Tool Requirement

The doctorate at SIUC is a research-oriented degree. The research tool requirement is intended to be an integral part of the student's program. Since research materials, problems, and techniques vary from discipline to discipline, the details of the research tool requirement are determined by the faculty of each of the doctoral programs.

Residency

The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of graduate credit on campus as a doctoral student within a period not to exceed four calendar years. No more than six hours of deferred dissertation credit may be applied toward fulfillment of the 24 semester hours residency requirement. No doctoral student should be permitted to sign up for more than six hours of dissertation until candidacy has been achieved. Any dissertation hours registered for above the six permitted prior to candidacy will not be counted toward completion of the doctoral degree. Credit earned in concentrated courses or workshops may apply toward fulfillment of the residency requirements if the student is concurrently registered for a course spanning the full term. No more than six semester hours of short course or workshop credit may be applied to the 24 semester hours residency requirement.

Admission to Candidacy

Admission to candidacy is granted by the dean of the Graduate School upon recommendation of the faculty responsible for the student's program, after the student has fulfilled the residency requirement for the doctoral degree, passed the preliminary examination, and met the research tool requirement of the program. The doctoral degree may not be conferred less than six months after admission to

candidacy, except upon approval of the dean of the Graduate School. The candidate must fulfill all requirements for the degree within a five-year period after admission to candidacy. If completion of requirements is delayed beyond five years, a student may be required to take another preliminary examination and be admitted to candidacy a second time. All candidates must remain registered until completion of their degree. See section "Continuing Enrollment Requirement".

Dissertation

After being admitted to candidacy, the student must complete a dissertation showing that the student is capable of independent research or other creative effort. A successful dissertation usually represents the most extensive and intensive scholarly work the student has performed to date. Completing the dissertation will lead the student up to the cutting edge of research (however defined by the discipline) conducted at that time in his or her field of research. A dissertation must address a significant question and demonstrate that its author can interpret findings and formulate conclusions that are the result of independent thinking and sustained evaluation of source materials. These findings must be expressed in clear and grammatical language that is well organized into cogent and coherent argument. A dissertation that contains the student's published or in-press manuscripts, or excerpts from these manuscripts, shall, in the preface, describe these materials and their contribution to the dissertation. In the case of multi-authored manuscripts, the student's contribution to each such manuscript must be clearly delineated in the preface and attested in a separate statement by the chair of the dissertation committee addressed to the Graduate School. The dissertation shall be supervised by a faculty committee which has been approved by the dean of the Graduate School. Unless the graduate dean has approved an exception requested by the student's academic unit this committee shall consist of five or more graduate faculty members, at least one of whom shall be from a graduate program outside the student's academic unit. The student's academic unit shall be understood to mean the department (or equivalent units) and any member outside the department is eligible to serve as the outside member providing that the department and the graduate dean agree.

While working on the dissertation, the student must register for the course numbered 600. The student is to devote at least one academic year of full-time work to complete the dissertation and will register for 24 semester hours of dissertation credit, for example, 12 hours for each of two terms.

Students who have registered for 24 semester hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing enrollment requirement described in the section titled "General Regulations and Procedures".

Publication of the doctoral dissertation to insure its availability to the scholarly community is considered an integral part of the process of doctoral education. Students must have their dissertations microfilmed by University Microfilms. An abstract of the dissertation will be published in *Dissertation Abstracts International*.

The student must submit electronically a pdf. version of the dissertation acceptable to the Graduate School, along with an abstract. There is a fee of \$90.00 to cover the cost of publication of the abstract and microfilming of the dissertation. If copyright is desired, an additional fee of \$55.00 will be required. The Survey Form of Earned Doctorates is completed and submitted to the Graduate School.

The abstract will be published in the current *Dissertation Abstracts International* and the dissertation will be cited in *American Doctoral Dissertations* and *Comprehensive Dissertation Index*. A copy of the microfilmed dissertation will be placed in the Library of Congress archives. This service assures the student that the dissertation will be available to other researchers at no further personal expense to the student.

If the student elects to use the copyright service, copyright will be obtained in the student's name. Publication rights, other than for reproduction in microform or from microform, are the student's to assign to any publisher at any time. In addition, arrangements can sometimes be made for University Microfilms to publish a small edition of the dissertation.

Final Examination

There will be a final oral examination administered by the student's doctoral dissertation committee. The examination will cover the subject of the dissertation and other matters related to the discipline. Any member of the graduate faculty may attend the final oral examination and may participate in questioning and discussion, subject to reasonable limitations imposed by the chairperson of the committee, but only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree only if the members of the committee, with at most one exception, judge both the dissertation and the performance at the final oral examination to be satisfactory. In cases where a committee of more than five members has been approved, the requirement of not more than one negative vote will still apply.

Interdisciplinary Doctor of Philosophy Programs

These guidelines provide for interdisciplinary doctoral programs for a limited number of students whose educational requirements can be met by existing resources, but not exclusively by any one of the University's constituent units. Interdisciplinary doctoral programs will be instituted in response to the particular academic interest of individual students, not as programs of a permanent na-

ture. The procedures and criteria given below govern the authorization and control of interdisciplinary doctoral programs.

1. After admission to an established doctoral program at SIUC and upon the recommendation of the chairperson or adviser of that program, a student may apply for an interdisciplinary doctoral program to the dean of the Graduate School.
2. The dean of the Graduate School will apply the following criteria in deciding whether a program committee should be established to consider the proposed interdisciplinary doctoral program.
 - a. The requisite staff must be available.
 - b. The library holdings must be adequate without unreasonable additions.
 - c. The program must lie within the recognized disciplines or fields of study, at least one of which offers the doctoral program.
3. If the dean of the Graduate School is satisfied that the proposed program satisfies these criteria, the dean shall form a special program committee of five members, at least three of whom shall be from units offering the doctorate.
4. If the committee approves the proposed program, a plan of study shall be developed that includes the following elements:
 - a. Fields or areas of study
 - b. Required courses
 - c. Languages or other research tool requirements
 - d. Dissertation subject
 - e. Preliminary examination
5. The program as approved by the committee and accepted for principal sponsorship by a unit with an approved doctoral program shall be submitted to the dean of the Graduate School. Upon final approval the student's program shall have the same binding effect upon the Graduate School as programs printed in the graduate catalog. The degree earned shall carry the title of the doctoral unit that has assumed principal sponsorship. The commencement program shall give specific indication that the degree is interdisciplinary and include a listing of those units that are substantively involved in addition to the principal sponsoring unit, as determined by the graduate dean.
6. When the committee has certified all the required performances, including the results of examinations, the committee shall be dissolved.

Concurrent Doctoral and Law Degrees Programs Political Science and Law (JD / Ph.D.)

Cooperative Doctoral Degree Programs between SIUC and SIUE

A cooperative doctoral program between SIUC and SIUE permits classified graduate students to be enrolled in certain designated courses at either SIUC or SIUE and earn credit in partial fulfillment of the doctoral degree requirements at SIUC. The following SIUC doctoral

programs have approved cooperative agreements with SIUE:

Educational Administration Ph.D.
Engineering Science Ph.D.
Historical Studies Ph.D.

Summary of Doctoral Degree Requirements

- Achievement of a grade point average of at least 3.00.
- Completion of any specific courses required by the doctoral program.
- Fulfillment of the residency requirement.
- Completion of the research tool required by the doctoral program.
- Passing of the preliminary examination.
- Admission to candidacy.
- Completion of an approved dissertation with 24 hours of dissertation credit.
- Oral defense of dissertation.
- Electronic submission of dissertation (pdf version) to the Graduate School.
- Completion of Survey of Earned Doctorate.
- Degree conferred not less than six months nor more than five years after admission to candidacy.
- Submission of departmental clearance form.
- Register for 601 Continuing Enrollment, as required.

General Regulations and Procedures

This section includes Graduate School procedures and regulations applicable to all graduate students regardless of degree classification. Requirements unique to the master's and doctoral degrees are stated in the section titled Degree Requirements. For information about specific degree programs the student should consult the appropriate degree program description. Requirements unique to the non-degree classifications are stated in the section in this chapter titled "Nondeclared Students—Non-Degree".

APPLICATION FOR GRADUATE STUDY

Information regarding graduate degree programs offered at SIUC can be found on the Graduate School home page at www.gradschool.siu.edu; see the link "Academic Degree Programs". Under the link "Degree Program Information", there is basic information relating to each program – areas of specialization, tests required, terms for which that program admits students, application deadlines, and departmental contact information.

Applying to a Degree Program

The Application for Admission to Graduate School can be found on the Graduate School home page at <http://www.gradschool.siu.edu>; see the link Admissions. This application is required for admission to *all* programs. A copy of the application will be sent to the department(s) to which the student is applying. Check the department's home page for a list of required materials. All application materials must be returned to the department. See departmental contact information for complete mailing address.

Items routinely required are: Application for Admission to Graduate School (electronic), departmental application form, application fee, official academic credentials, letters of recommendation, test score if required, and Statement of Purpose. Departments may require other materials.

Application Fee

The Graduate School has a \$50.00 non-refundable application fee for nondeclared graduate students. In addition, all programs require a non-refundable application fee of \$50.00 which must be submitted with the Application for Admission to Graduate Study. If you are applying to more than one program, a fee must be paid to each program.

Transcripts

Students are required to submit official transcripts from all U.S. schools attended during their last two years of undergraduate study, and also for all graduate work completed. Some departments may require transcripts from all schools attended as an undergraduate student. Any student wishing to be considered for Graduate School

fellowships must submit to the department an official transcript for *every course* taken as an undergraduate and / or graduate student.

Transcripts from institutions where the student received neither a degree nor enrolled for more than 12 semester hours of undergraduate credit are not required, provided that the grades obtained at such institutions are recorded upon the transcript of the college which granted the student's degree (please note: this does not apply to transcripts submitted for fellowship competitions).

All transcripts submitted for admission to a degree program must be sent directly to the department to which you are applying. See departmental contact information for complete mailing address.

Students applying for nondeclared admission are only required to send one official transcript showing either a bachelor's, master's or Ph.D. earned. They should be sent directly to Graduate School Admissions - Nondeclared, Woody Hall B103, Mailcode 4716, SIU, Carbondale, IL 62901. Any transcripts submitted in person must be received by the student directly from the institution attended, and must be submitted to the Graduate School in an unopened envelope.

Transcripts submitted will not be returned nor forwarded to other institutions.

In accord with the Family Education Rights and Privacy Act of 1974, no non-Southern Illinois University Carbondale person, firm, or agency may have access to an applicant's or a student's credentials without written consent of the individual concerned. Graduate students shall be permitted to examine their own records upon request. Such requests should be made by the student to the dean of the Graduate School.

Test Scores

The Graduate School does not require any graduate tests for admission. Individual departments may require, at their discretion, the GMAT, GRE, MAT, or other appropriate standardized tests for admission. Check the website of the department to which you are applying or contact the department directly for more information. Information is also listed on the Graduate School home page under "Degree Program Information", but should be verified by the department.

Deadlines

While the Graduate School does not have an application deadline, many departments do. The deadlines may be as early as December 1st for the following fall semester. Please check the department to find out what application deadlines they may have. These deadline dates are also listed under "Degree Program Information" on the Graduate School home page, but should be verified with the department. Regardless of any deadlines, applicants

should submit materials to the department as far in advance as possible, to have the best chance to be considered for admission and funding.

Requirements

The admission requirements of the Graduate School and the department must both be met before the student is admitted to a degree program, and both the Graduate School and the department may specify conditions. Most departments require additional materials such as letters of recommendation; these should be forwarded directly to the department or submitted online by the recommender via Apply Yourself. The student will be informed by the Graduate School of the resultant admission status after this process has been completed.

Terms of Admission

Please note that some departments may not admit students for all semesters. Some allow admissions for fall semester only, some for summer only, and some for fall and spring terms only. For more information, check with the department to which you are applying or also check the Graduate School home page "Degree Program Information".

Updating Admission for Future Terms

All admissions are for the specific term indicated. Should a student wish to update their admission to a future term, they must contact the Director of Graduate Studies in the department to which they are applying. The petition to update can only be granted within one calendar year of the initial admission term and only with the agreement of the department and the Graduate School. A new application form will be required, as well as official transcripts for any course work completed since the original application. After one year, the student must submit new application materials.

Admission of Faculty Members

No one who holds a faculty appointment at any of the academic ranks—lecturer, instructor, assistant professor, associate professor, and professor—shall be admitted to a graduate degree program at any level, or be eligible to register for courses to be taken for graduate credit, in the graduate degree program in which the faculty member holds the appointment. If a faculty member has been admitted to a graduate degree program in some unit other than the one in which such appointment exists, no member of the faculty of the unit in which the appointment is held may be a member of that colleague's thesis committee, graduate program committee, dissertation committee, or any other examining committee. (See also faculty appointments in the section titled Financial Assistance.)

Admission of International Students

This school is authorized under federal law to enroll non-immigrant alien students. A student from abroad is subject to all requirements for admission established by the Graduate School. For other information concerning interna-

tional students, inquiries should be sent to the Graduate School Admissions Office, Woody Hall B103.

To allow ample time for visa and other departure procedures, the applicant should have an application and all supporting documents on file with the University no less than six months prior to the proposed entry date. Some departmental deadlines may require an even earlier application.

International students must be enrolled in a program leading to a graduate degree. They cannot be admitted as nondeclared students.

If the above requirements are satisfactorily met and the student is admitted to a degree program, the applicant will be required to certify that personally adequate financial resources will be available to undertake and continue in a program of study.

Test of English as a Foreign Language (TOEFL). All applicants whose native or first language is not English must take the TOEFL test no more than 24 months prior to the term for which the applicant is seeking admission. A minimum TOEFL score of 550 (paper); 213 (computer), 80 (internet) is required for Graduate School admission; higher scores may be required for admission into specific degree programs. The IELTS exam is also acceptable (a minimum score of 6.5).

Exemptions to the TOEFL requirement are: (1) an applicant who has recently completed a bachelor's degree (four years attendance and completion of at least 100 semester hours of graded coursework) at an accredited institution in the United States; (2) an applicant who has completed a master's degree at an accredited institution in the United States, who obtained a TOEFL score of at least 550 immediately prior to beginning graduate studies and who has been in residence in the United States continuously prior to application to SIUC. Verification of the earlier TOEFL score by the degree granting institution is mandatory.

Official TOEFL scores will be sent only to the Graduate School Admissions Office. A photocopy of the examinee's score should be sent by the student to the department of application or submitted online via Apply Yourself graduate application

Conditional Admission of International Students.

Conditional admission of international students will be considered on an individual basis. The student must be applying to a program which requires only the Graduate School minimum of a 550 / 213 / 80 score on the TOEFL exam. Departments which require a higher TOEFL will not use this option; for those programs, the required score must be submitted in advance before an application will be considered. Please note that some programs will not allow this option.

In most cases, the student must submit a recent TOEFL score, to be used for placement in English language classes, before a conditional admission can be considered. The department to which the student is applying, must also agree to use this option. The student must be acceptable

for admission based on all other academic criteria, with the possible exception of a graduate test score such as the GRE or MAT.

Before this option can be considered, the student must submit all required application materials to the department, including a recent TOEFL, however low. Departments may confer with the Graduate School Admissions Office with regards to using this admissions option. Graduate admissions will coordinate with the CESL Office to arrange for the student's enrollment in CESL classes, and will issue a conditional Graduate School I-20, guaranteeing the student admission to the graduate degree program following completion of the required English language classes.

Academic Requirements. If a foreign-born applicant has recently completed a four-year bachelor's degree program at an accredited institution in the United States of America (minimum of 100 hours of graded coursework), the applicant may be given the same consideration for admission to a graduate degree program as a United States citizen, in regard to both academic requirements and the use of English as a foreign language.

Applicants who have completed the equivalent of a four-year bachelor's degree at a recognized institution in any other country must have an academic record equivalent to a 2.70 grade point average ($A = 4.00$) on their last two years of study for admission to a master's degree program.

The determination of the applicant's grade point average shall be the responsibility of the Graduate School.

Applicants for doctoral programs must meet the regular academic requirements for admission to a doctoral program.

Qualification for Assistantship with Teaching Duties. Every non-native English speaker assigned a graduate assistantship with teaching duties must pass an examination of oral English skill before undertaking classroom duties.

There are two parts to the exam: an interview and a teaching sample. The procedures for this exam are described below. The exam is given by a three person committee: a department representative, a Center for English as a Second Language representative, and a Graduate School representative.

The *interview* begins by asking the student general information. The interview covers reasons for choosing Southern Illinois University, the student's chosen field of study and major emphasis, plans for graduation and the future, and also information about the nature of the projected teaching assignment.

For the *teaching sample*, the student gives a 10 to 15 minute teaching presentation on a topic related to his/her assistantship duties. The interviewers act as potential students in the relevant setting, asking the kinds of questions likely to be posed by students in such a setting.

Upon completion of the oral exam, the interviewers rate the student independently on three sets of scales:

1. comprehension (how well the student understood what was asked)
2. speaking/fluency (how grammatically and fluently the student spoke)
3. pronunciation/accent (is the accent a barrier to communication)

The result of the oral interview is a consensus of all three interviewers, arrived at immediately upon comparison of the ratings.

There are three outcomes for the exam:

1. Pass, which allows the student to serve as a teaching assistant without restriction.
2. Conditional assignment, which limits the student's potential assignments. Limits are specifically tailored to the student's performance level, e.g., (for example: grading only, help sessions, laboratories under close supervision, one-on-one tutoring sessions, or to relatively advanced classes within the major subject).
3. Failure.

Students who fail, or are given a conditional assignment, may be re-tested the next semester or when potential teaching assignments change.

The Graduate School sends letters detailing the results of the examination to the student's academic department, and a copy is placed in each student's graduate assistant file.

REGISTRATION

Only those students who have been officially admitted by the Graduate School will be permitted to register.

Some degree programs require their students to have an advisor's signature before registration. Please consult the designated major department about advisement. Nondeclared non-degree students are technically self-advised and may begin registration for the admitted semester after the registration period begins.

The *Schedule of Classes* for a particular semester is available online via SalukiNet

<https://salukinet.siu.edu/cp/home/displaylogin>.

Students are strongly encouraged to complete their registration before the beginning of classes. After the beginning of the term, the student must have the approval of the Graduate School to register late and will be required to pay a late registration fee. In addition, after the first week of classes, registration or program changes involving adding a course must have the written approval of the instructor of each course as well as the approval of the Graduate School.

Information concerning registration dates and deadlines for the first time the student attends the University will be sent when the student is admitted to the Graduate School. Continuing students should consult the SIUC *Schedule of Classes* <http://registrar.siu.edu/records/schedclass.html> for each semester to find deadlines and dates for registration.

REGISTRATION METHODS

During the advance registration period (see registration calendar for dates in the SIUC *Schedule of Classes*

Information <http://registrar.siu.edu/records/schedclass.html>
graduate students may register by several methods described below. Nondeclared students may use any of the methods. Degree-seeking students may be required by their departments to have a run number.

Web Registration

Nondeclared students and degree-seeking students will register online via SalukiNet

<https://salukinet.siu.edu/cp/home/displaylogin>. To begin the registration, a student needs a network ID and a password. If you are not yet admitted to the Graduate School or do not have department approval to register or there is some other problem situation, the computer states that you are ineligible to register.

Registration at the Graduate School

The Graduate Registration Center is located at Woody Hall B104. After the first week of classes, all students must register in person from 8:00 A.M. to 4:30 P.M., Monday through Friday. After the first week of classes, students are required to have the instructor's and the graduate dean's permission to add courses and must come to the center to process a registration or add. Drops are to be processed online through week 8 for full semester classes or drop deadlines for shorter classes. Drop deadline for refund for full semester classes is week 2.

Late Registration

A late registration fee of \$15 shall be assessed to all students taking on-campus classes who register the first day of classes or later. This fee shall be non-refundable and cannot be waived, except when it is clearly shown that the late registration was caused by faculty or administrative action. Off-campus classes and registration in 599, 600, and 601 shall be exempt from such fee.

OTHER TYPES OF REGISTRATION IN GRADUATE COURSES

The following discussion concerns students who are either nondeclared for various reasons or are undergraduates wanting to take graduate-level courses.

Nondeclared Students—Non-Degree

A person may apply for admission to the Graduate School as a nondeclared student when the applicant does not seek a graduate degree or has applied too late to be admitted to a degree program for the term for which admission is sought, or does not meet the minimum GPA requirements for admission to a graduate degree program at this time.

If a nondeclared student is admitted to a degree program at a later time, the director of that program may petition the graduate dean that graduate courses completed while the student was nondeclared be applied toward fulfillment of degree requirements. The student will be subject to the

rules and regulations of the Graduate School and the department concerned including the completion of at least

9 hours after being admitted to a master's degree program from nondeclared status.

Please note that nondeclared graduate students are not eligible for Graduate School fellowships or tuition waiver scholarships. Nondeclared students may request an exception to hold an assistantship for one semester under some circumstances. Contact the Assistantship Office for details. Loans may be available for one 12 month period only, beginning when the student first enrolls in the nondeclared category and ending 12 months later. To determine eligibility, contact the Financial Aid Office.

Regular Nondeclared

A person who seeks admission as a regular nondeclared graduate student must have been awarded a bachelor's or higher degree. A student admitted as a regular nondeclared student may enroll in graduate courses as long as the student meets retention standards of the Graduate School. Please note that funding is not available after one year.

Late-Entry Nondeclared

An applicant to a degree program who meets Graduate School admission standards but whose materials are received too late for processing may be granted late-entry, nondeclared status for the term for which admission was originally sought. The application papers will continue to be processed for admission to a degree program for the term following the one originally applied for. Whether or not work taken by a student who is nondeclared because of late application will later count toward a degree will be decided by the Graduate School and the department concerned.

Temporary Nondeclared (classes taught off-sight or web-based programs only)

A student may register as a temporary nondeclared student for one semester only. If the student wishes to enroll in graduate courses after this time period, the student must apply for and be admitted, either to a degree program or to regular nondeclared status. Complete admission paperwork must be submitted before subsequent registrations will be allowed.

Undergraduate Student Registration in Graduate Courses

Graduate Credit

An undergraduate student who wishes to register for a graduate course (400- or 500-level course) for graduate credit must file the standard application for admission to the Graduate School and submit a request for graduate credit. Forms are available in the Graduate School Admissions Office, Woody Hall B103. If the student is academically eligible for admission to a degree program, the student will be allowed to register as an undergraduate for graduate courses for graduate credit when within 12 semester hours of completing requirements for the bachelor's degree. Permission of the instructor teaching the course must be obtained, and for 500-level courses,

the permission of the Chair of the department offering the course.

An undergraduate student who meets these qualifications will be allowed to take graduate courses for graduate credit for one semester or one summer term. If, at the end of the term, the student has not received the bachelor's degree, permission to enroll in graduate courses for graduate credit will be withdrawn until after the bachelor's degree has been conferred. Graduate credit cannot be granted once a semester is complete.

Undergraduate Credit

The Graduate School has the responsibility of approving the registration of undergraduate students in 500-level courses for undergraduate credit. Undergraduate students should only be encouraged to take 500-level courses if they are properly qualified. In dealing with these requests the following procedures must be followed.

The chair of the department offering the course, in collaboration with the instructor who is teaching the particular course, should forward a letter to the Associate Director of the Graduate School, Woody Hall B114, indicating their approval for this student to enroll in the 500-level course for undergraduate credit. Since such a request should only be made for superior students, the letters should include such information as: (1) undergraduate GPA (at least 3.0 required); (2) general description of the student's academic work; and (3) why this course would be beneficial. The student must go to the same office to obtain permission to enroll upon receipt of the letter by the Associate Director. If permission to enroll has been granted by the Associate Director, this will be indicated to the registration center. Accordingly, the student should bring the request form or add/drop slip to the Graduate School.

School of Law Courses

A graduate student may enroll for graduate credit in designated law courses if the student has permission of the dean of the School of Law and the dean of the Graduate School. Registration must be processed through the Graduate School and the grades will be reported on the Graduate School letter grade system (*A, B, C, etc.*).

A law student may register for law credit in graduate courses with approval of the dean of the School of Law and the graduate dean. Registration must be processed on School of Law forms and the grades will be reported on the Graduate School letter grade system.

A law student may not register for graduate courses for graduate credit unless the student has been admitted to the Graduate School in an approved concurrent program.

Residence-Center Credit

Credit earned at approved graduate residence centers will be entered on a student's record as on-campus credit earned at SIUC.

Students enrolled for credit in approved residence-center master's degree programs or in specific residence-credit courses must have been officially admitted (either in a

degree program or nondeclared) to the Graduate School at SIUC.

For information about specific programs and courses, the student should consult the appropriate department.

GRADUATE STUDENT COURSE LOADS

Financial Aid Awards

For financial aid *awarding* purposes, the following defines the number of semester hours for full-and half-time:

Status	16-Week Semester	8-Week Session
Full-time	12	6
Half-time	6	3

Graduate students enrolled in fewer than 6 hours for fall and spring semesters or 3 hours for summer session are not eligible to *obtain* student loans.

Enrollment Certification

The following semester hours of credit are to be used to certify full-time and half-time attendance of graduate students.

Status	16-Week Semester	8-Week Session
Full-time	9 or more hours*	3 or more hours
Half-time	6 hours	3 hours
Less than half-time	Less than 6 hours	Less than 3 hours

*Students who hold at least a quarter-time (25% FTE) graduate assistantship are considered as full-time if they have a minimum of 8 semester hours.

Minimum and Maximum Course Loads

Maximum coursework for graduate students is 16 hours each semester; 12 hours is considered normal load. The minimum and maximum loads for graduate students under various types of financial support are summarized below. To meet the minima below, a graduate student must enroll in graduate-level course(s) (typically a 400- or 500-level course; certain 400-level courses are not available for graduate credit). Audit work will not qualify to meet the minimum load. However, audit work is calculated in determining a student's maximum course load. Exceptions to these minima and maxima are possible only with the written permission of the graduate dean. If graduate students' enrollments exceed the maximum or fail to meet the minimum of hours required by their type of financial support, their registrations will be withdrawn and financial support will be terminated.

<u>Type of Financial Support</u>	<u>16-Week Semester</u>		<u>8-Week Session</u>	
	<u>Max.</u>	<u>Min.</u>	<u>Max.</u>	<u>Min.</u>
No financial support	16		9	
Graduate Assistantships				
1/2 time appointment	12	8	6	3
1/4 time appointment	14	8	9	3
Full-time University employees	8		6	
Graduate Fellowships	16	9	9	3
Full Veteran's Benefits	16	9	9	3
SIUC Scholarships	16	9	9	3

All University employees who wish to use the employee tuition and fee waiver (faculty and staff) and are classified as graduate students must seek approval of the Graduate School to enroll in more than 6 semester hours of courses.

CONTINUING ENROLLMENT (601)

Registration in 601 (1 hour per semester) is required of all graduate students, whether in residence or not, who are not otherwise enrolled for fall or spring semester. Concurrent registration in any other course is not permitted.

Students registering for 601 are assessed only in-state tuition for the credit hour associated with the registration. Since student fees are not assessed for 601, the students are not eligible for the benefits of any other programs such as Recreation Center use, Health Service and Student Medical Benefits, Students' Attorney Program assistance, etc. Students needing the above benefits that require fees may instead register for additional research, thesis, or dissertation hours.

All students in a graduate program, but not enrolled in classes by the Friday of the first week of the fall or spring semester, will be registered in 601 by the Graduate School and charged tuition for 1 hour of 601. This hour will be dropped if the student subsequently enrolls in a class that semester or is granted a leave of absence by his/her graduate program by the 8th week of the semester. Each program has its own policy of whether and when to grant leaves of absence. Students on leave are not required to enroll in 601 for the period of leave, but a leave of absence does not affect the time-to-degree requirements. The requirement of 601 enrollment ends when a student passes the six-years to complete a master's degree, without completing the degree, the five-years of doctoral candidacy, or officially withdraws from a program prior to completion of the degree, or graduates. Students who are granted extensions to these time limits would be covered by this revised 601 policy. Summer sessions are exempt from the continuous enrollment requirement.

TRANSFER CREDIT

All graduate credits earned by a student in good standing at an accredited university, which have not been applied toward fulfillment of requirements for another degree, are eligible for transfer to that student's degree program, subject to general limitations of Graduate School regulations, residency requirements for doctoral degree programs, and acceptance by the student's major department. All transfer credits are subject to final review by the graduate dean. No transfer credit will be given for work bearing a grade below *B* or graded "satisfactory" without express permission of the graduate dean in response to written petition from the student's department. No credit toward a degree may be earned by correspondence nor in off-campus courses at another university. In the case of a master's degree, the student must earn at least half of the credit applied toward

fulfillment of degree requirements in courses offered by SIUC.

The department recommending the graduate degree shall administer all required general and final examinations, and a member of the graduate faculty at SIUC shall direct the student's master's thesis, required research paper, or doctoral dissertation.

GRADUATE GRADING SYSTEM

- A Excellent. 4 grade points.
- B Good. 3 grade points.
- C Conditional, not fully satisfactory. 2 grade points.
- D Poor, not satisfactory. 1 grade point.
- F Failure. 0 grade points.
- S Satisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
- U Unsatisfactory. Used for thesis and dissertation credit and certain designated and approved 500-level research, internship, and practicum courses. Is not counted in calculating grade-point average.
- W Authorized withdrawal made through a program change. Work may not be completed. Refer to grade explanation below.
- INC Incomplete. Has permission of the instructor to be completed within a period of time designated by the instructor. Refer to grade explanation below.
- DEF Deferred. Used only for certain designated and approved 500-level courses of an individual continuing nature such as research, thesis, or dissertation. Refer to grade explanation below.
- AU Audit. No grade or credit earned. Refer to grade explanation below.
- WU Unauthorized withdrawal at instructor's discretion for student in good standing in class who stopped attending class during first 60% of the semester. This grade cannot be made up.

Grading System Explanation

Only courses for which the grades of *A*, *B*, *C*, or *S* have been received are acceptable in fulfillment of graduate degree requirements. The letter grades *A*, *B*, *C*, *D*, and *F* are included in computing the grade-point averages for academic retention. If a graduate student repeats a course with the permission of the graduate dean, both grades will be counted in the grade-point average. Graduate students will not receive graduate credit for Pass/Fail grades. They may not receive a grade of Pass/Fail in a 400-level course graded Pass/Fail on an elective basis.

400-level courses. Most 400-level courses may be taken for graduate credit. The Graduate Catalog will indicate those 400-level courses which may be taken for graduate credit. No grades of Pass/Fail may be given for a 400-level course for graduate credit. The instructor in a 400-level course which can be taken for graduate credit has the discretion to decide whether to require additional work for graduate credit.

Withdrawal. Except for the WU grade, a *W* indicates authorized withdrawal from a course prior to the date indicated in the *Schedule of Classes* for the term in which the course was taken. The student's record will reflect the courses from which the student had withdrawn with the symbol *W* and the week of withdrawal. Program changes to drop a course during the first two weeks of classes result in no entry being made on the student's record (consult the section titled "Withdrawal from Courses and from the University" for additional information on withdrawal procedures and deadlines).

Incomplete. An *INC* is assigned when, for reasons beyond their control, students engaged in passing work are unable to complete all class assignments. An *INC* must be changed to a completed grade within a time period designated by the instructor. *INC* is not included in grade-point computation.

To complete the work from the original registration, a student should not register for the course again, but should complete the work for the original registration if the original registration is within the normal time limits established for the degree.

Deferred. When the work is completed in a course for which *DEF* has been assigned, the grade is changed to a letter grade by the instructor, except in the case of theses and dissertations. When a thesis or dissertation has been submitted to the Graduate School as approved, the grade is automatically changed to *S*. If a thesis or dissertation is found unacceptable and the student is dismissed from the program, the grade of *U* is automatically assigned upon receipt by the Graduate School of the action dismissing the student.

Audit. A student registering for a course on an audit basis receives no letter grade and no credit hours. The student's registration must indicate audit registration and the same fees are paid as when registering for credit. During the first two weeks of a regular semester a student registered for a course for credit may change to audit status or vice versa through the official program change process. Thereafter, the change may not be made.

Changing of Grades. At the completion of a course the final grade assigned to a student is the responsibility of the instructor of the course. Grades given at the end of the course are final and may not be changed by additional work or by submitting additional materials; however, clerical errors in recording grades can be corrected. To correct a clerical error, the assigned instructors should submit a grade change card together with an explanation and justification of the grade change for the approval or disapproval of the department chair, the appropriate college dean, and the dean of the Graduate School. In cases of theses and dissertations, for which *DEF* grades are given, the Graduate School changes the *DEF* grades upon presentation and acceptance of the thesis and dissertation and receipt of the departmental approval papers. In courses for which *INC* and *DEF* grades have

been given, the assigned instructors has the responsibility of determining the final grade to be assigned and notifying the Registrar's Office of the final grade by means of the grade change card.

WITHDRAWAL FROM COURSES AND FROM THE UNIVERSITY

Dropping Courses

Students officially registered for courses must withdraw formally. They must process an official withdrawal form. Outlined below are the procedures to be followed by graduate students when withdrawing from courses.

Deadlines for Dropping from a Course(s)

If Classes*	Deadline for Drop to Receive Refund	Deadline to Drop
13–16 weeks	2nd week	8th week
9–12 weeks	2nd week	6th week
8 weeks	2nd week	4th week
7 weeks	1st week	4th week
4–6 weeks	1st week	3rd week
2 or 3 weeks	1st day	1st week
less than 2 weeks	1st day	2nd day

*Students must drop a course or withdraw from the University by these deadlines to receive an account credit equal to a full refund of tuition and fees. Students who drop courses after the full refund deadline but remain enrolled in the University will not receive any refund. Students who withdraw from the University after the full refund period will receive an account credit up to week 4 (see chart on page

Students officially withdraw from courses through the program change process. This process starts with the academic adviser and is completed at the Registration Center. Graduate students may drop from a course through the 8th week of the fall and spring semesters. Drop deadlines for shorter sessions are correspondingly earlier (see schedule above). Official withdrawals during the first two weeks of the semester result in no entry being made on the student's record. Official withdrawals after the second week but prior to the 8th week of classes will result in the course listed on the student's record with the symbol *W* and the week of withdrawal. No drop from a course will be authorized after the 8th week of classes. It is the student's responsibility to insure that the drop process is officially completed.

Withdrawal from the University

A complete withdrawal from the University may be authorized by the graduate dean through the Friday of week 8 of classes. Students who withdraw from all classes will have a statement of withdrawal from the University entered on their records. Students who find it necessary to withdraw from the University after school has started and who are on campus should contact the Graduate School in person to initiate the withdrawal process. If they are unable

to come to campus, they may write the Graduate School asking that it process a withdrawal.

Students receiving a withdrawal from a full semester length course within the first two weeks will, under normal circumstances, receive a refund of all tuition and fees paid by the student. All financial assistance funds will be returned to their original sources if the student withdraws during the 100% period.

Students who withdraw after the full refund deadline will receive an account credit equal to the appropriate refund of tuition and fees. An administrative fee will be assessed to all students who withdraw from the University and receive a refund beyond the full refund period. The amount of the fee will be a fixed charge of \$100.

REFUND SCHEDULE FOR WITHDRAWALS FROM THE UNIVERSITY (EFFECTIVE FALL 2009)

SIUC Refund Policy

This chart is based on refunding for full semester length course

Percentage of Refund

	Tuition	Fees
Week One	100%	100%
Week Two	100%	100%
Week Three	50%	100%
Week Four	50%	0%
Week Five and after	0%	0%

No tuition refund will be given after week four; no refund of fees will be given after week three. Student fees are charged as a condition of enrollment.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). These students may choose to withdraw completely and have the withdrawal backdated to show no enrollment. If withdrawing during the third through tenth weeks of schools, these students may receive WMS grades in all classes, with the appropriate refund. When the withdrawal occurs after the tenth week, students will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits, students must remain in school to within ten days of their military reporting date.

Students in military service with the State of Illinois pursuant to the orders of the Governor have the right to receive a full monetary credit or refund for funds paid to any Illinois public university, college or community college if the person is placed into a period of military service with the State of Illinois in the event of state emergencies pursuant to the orders of the Governor and is unable to attend the university or college for a period of seven or more days. Students may elect to receive course credit for all of their courses rather than a refund.

All students seeking a withdrawal must contact the Graduate School in person or by mail. The effective date of

the withdrawal, if granted, will be the student's last date of class attendance, provided the student completes the requirements for the withdrawal. Incomplete applications for withdrawal will be denied. Any student who fails to comply with the withdrawal procedures will receive grades for the semester and must satisfy the financial obligations for the semester.

Students who have a graduate assistantship and resign from their contract will not be automatically withdrawn from their courses. Students must complete the withdrawal process

RETENTION

Any graduate student whose grade point average falls below 3.00 will be placed on academic probation. Faculty of a degree program-unit may determine its own grade point average requirements (above the grade point minimum for retention in their particular program.) All 400- and 500-level courses taken after a student is admitted to the Graduate School are considered graduate level, unless the course is specifically designated, Not for graduate credit, for all students. Grade point averages for doctoral students are based on graduate credit work completed at SIUC after admission to the doctoral program. Grade point averages for master's degree students and nondeclared graduate students are based on all graduate credit work completed at SIUC.

Any graduate student on academic probation whose grade point average remains below 3.0 for two consecutive semesters in which she or he is enrolled, excluding summer sessions, will be permanently suspended from the Graduate School, unless the department and the collegiate dean petition the graduate dean for an exception.

GRADUATION

Graduation ceremonies are held each year at the end of each semester and summer session. Degree candidates must apply for graduation with the Graduate School by the end of the second week of the semester or session in which the student plans to graduate. Late graduation applications for extenuating circumstances beyond the student's control will be considered through the end of the eighth week of fall and spring semesters, and must be supported in writing by the student's department chair or director of graduate studies. The dean of the Graduate School will make a final determination based on the written request. No applications will be considered beyond the eighth week of fall and spring semesters and the second week of the summer term. Graduation application forms are available in the Graduate School and may be obtained by mail by writing that office, or by downloading from the Graduate School web page:

<http://www.gradschool.siuc.edu/>.

A \$25.00 graduation fee is established for all persons receiving degrees. The fee is payable at the time of application or the fee will be charged to the student's account. The fee does not cover the rental fee for the cap,

gown, and hood, or the cost of the invitations. These items are ordered through the University Book Store in the Student Center and questions regarding them should be referred to the University Book Store. Doctoral students are required to pay a fee of \$90.00 to cover the cost of electronic submission of the dissertation. Master's degree students are required to pay a fee of \$80.00 to cover the cost of electronic submission of the thesis.

Submission of research papers, theses, and dissertations are due in the Graduate School office by the published deadline date. Contact the Graduate School for dates. Doctoral students must also submit the survey form of earned doctorates at the time the dissertation is submitted.

The Graduate School *Guidelines for the Preparation of Dissertations, Theses and Research Papers* is available at the Graduate School website

(<http://www.gradschool.siuc.edu/>). Since each program has chosen a manual style that must be used in conjunction with the Graduate School guidelines, the student should contact the department for additional departmental information.

Although attendance at commencement is not compulsory, students who wish to graduate in absentia must notify the Graduate School in advance. This information is needed for seating arrangements and for mailing purposes. Graduate students may not attend commencement prior to degree completion; they may only attend the ceremony in which they are officially graduating.

Posthumous Degrees

A graduate degree may be awarded posthumously if, before the student's death, work for the degree had substantially been completed. This determination shall be the responsibility of the graduate dean in consultation with the administrative officers and faculty of the degree program in which the student had been enrolled.

RELEASE OF STUDENT INFORMATION AND ISSUANCE OF TRANSCRIPTS

The University follows a policy for release of student information in compliance with federal regulations. More specific information may be obtained from the Registrar's Office or from the Graduate School.

A transcript of the student's official educational record is issued by the Registrar's Office under the following conditions: a transcript is sent, issued, or released only upon a student's request or explicit permission, except that such permission is not required when the University faculty and administrative officials or other educational institutions request transcripts for official purposes.

In addition, requests will be honored from a philanthropic organization financially supporting a student and from a recognized research organization conducting educational research provided the confidentiality of the transcript is protected. A transcript will be issued directly to a student upon request. The transcript will have the statement, *Issued to the Student*, stamped on its face. Transcripts will be sent to recipients other than the student as requested in writing by the student. A transcript fee of \$5.00 will be payable in advance for every transcript the student requests. A transcript will not be sent, issued, or released if a student owes money to the University as verified by the Bursar's office.

Financial Assistance

Financial assistance is available to qualified students in all fields of study in the form of (1) graduate assistantships where one serves as a classroom teacher or assistant, as a research assistant, or as an administrative assistant, (2) fellowships or traineeships (3) scholarships, (4) federal work-study programs, and (5) loans. There are basic regulations that relate to these awards. Students should make application for the graduate assistantships, fellowships or traineeships through the department to which they have been admitted. Information and application forms for the tuition scholarship program may be obtained from the Graduate School website:

<http://www.gradschool.siuc.edu/financialaid.html>.

Information regarding the federal work-study program may be obtained from the assistantship office in the Graduate School. Loans may be obtained by contacting the Financial Aid office at <http://www.siuc.edu/~fao/>.

Students should be sure that their applications for admission are complete including the submission of required transcripts to the Graduate School to assure consideration for an award.

Graduate assistant appointments, graduate fellowships, and most traineeships include a tuition scholarship, but fees must be paid by the student. If a department has not established its own financial aid time limits, the following Graduate School time limits will apply. A student may receive no more than two calendar years of graduate-student support while a master's level student. A student may receive no more than four calendar years of graduate-student support while a doctoral-level student. Students directly admitted into a doctoral program from their bachelor's degree can receive up to five calendar years of support. The maximum number of years of graduate-student support for students seeking any combination of graduate degrees is six (72 months) unless a specific exception based on the student's programmatic needs is granted by the graduate dean. These time limits apply to assistantships, fellowships, traineeships, and other similar awards and appointments administered by the University, regardless of source of funds. Students who are awarded graduate assistantships, fellowships, or traineeships, but who have not furnished official proof of their most recent degree to the Graduate School shall be considered to be on term appointment for one semester only. No one will be appointed to a second term until an official transcript indicating receipt of the degree is received in the Graduate School.

Acceptance of an offer of financial aid (such as a fellowship, traineeship, or assistantship) for the next academic year by an actual or prospective graduate student completes an agreement which both student and Graduate School expect to honor. In those instances in which the student accepts the offer before April 15 and subsequently desires to withdraw, the student may submit

in writing a resignation of the appointment at any time through April 15. However, an acceptance given or left in force after April 15 commits the student not to accept another offer from another institution without first obtaining a written release from the institution to which a commitment has been made. Similarly, an offer by an institution after April 15 is conditional on presentation by the student of the written release from any previously accepted offer.

GRADUATE ASSISTANTSHIPS

Graduate assistantships (GAs) are available in a variety of places across campus, from academic departments and research centers to administrative and service units. This type of appointment comprises the largest number of awards offered by the University. A graduate assistant must be a registered student in a degree program. Nondeclared students are not eligible for graduate assistantships.

For these appointments, students should inquire directly to the chair of the department to which they have been admitted or to the appointing officer of a research center or administrative or service unit. Information about the criteria used to select GAs and to assign their responsibilities may be obtained by contacting the chair of the department, the administrator of a research or service unit, or the Graduate School.

The average GA appointment is 50% appointment (20 hours per week) and lasts for one academic year (9 months). There are also some 25% appointments requiring 10 hours per week. A student may hold two simultaneous quarter time (25%) appointments on campus without special approval. GA appointments may be either on a semester-pay basis or a fiscal-pay basis.

During the fall and spring semesters, appointments of at least 25% qualify for a 15-hour tuition scholarship. GAs on a graduate assistantship contract during the summer semester, qualify for an 9-hour tuition scholarship. The graduate assistantship appointment must be for at least 75% of the academic semesters (13 out of 17 weeks for the fall and spring semesters and 6 out of 8 weeks for the summer semesters). If a student is appointed for less than a full academic term on a fiscal pay basis, the appointment will not carry a tuition scholarship. A GA holding an appointment for the full length of fall and spring semesters consecutively will be eligible for an 9-hour tuition scholarship the summer session immediately following.

Salary schedules for graduate assistantships vary from unit to unit. For the current graduate assistantship stipends chart please refer to:

<http://www.orda.siuc.edu/rates/graduate.html>.

Generally doctoral students are paid higher rates than master's students. Information about the specific conditions of the appointment should be directed to the department or unit making the appointment.

In the best interests of both the University and students, academic departments should monitor outside employment and intervene in those cases where outside employment results in problems. Toward this end, it is within the rights and responsibilities of a department: 1) to require that graduate assistants holding outside employment notify their department, so that their performance can be monitored; 2) to make the relinquishing of outside employment a precondition for the continued enrollment of, and/or availability of assistantships to, students whose academic or assistantship performance has been rated Unsatisfactory; and 3) to cancel or not renew the assistantship contracts of those students whose assistantship performance is rated Unsatisfactory and who also hold and do not discontinue outside employment. Graduate students can appeal departmental decisions regarding outside employment and academic/assistantship status through the University's standard routes of appeal, or the grievance procedure in the GA United contract of application..

Federal Work-Study Graduate Assistantships

The Graduate School and the Financial Aid office jointly administer the Federal Work-Study Assistantship program. This program supports approximately five graduate assistants each year. The program provides for up to 75% of each graduate assistantship from federal funds, with the remainder coming from departmental or collegiate funds. Students qualify for this program on the basis of financial need. Students must be citizens or permanent residents of the United States. Further information on application procedures and eligibility criteria is available from the Graduate School.

Dissertation Research Assistantship Awards

Dissertation research assistantship awards are designed for superior students who are in the dissertation preparation stage of their graduate education. Selection is based on a competition primarily considering the student's academic research and quality of the dissertation prospectus. The recipient of a dissertation research assistantship must be officially admitted to candidacy by the beginning of the award. Failure to be admitted to candidacy by the beginning of the award will result in the award's revocation. The award is for a maximum of 11 months and provides a monthly stipend and a tuition scholarship.

There is a service requirement, with the specific duties to be assigned by the chairperson of the department. The student must be enrolled for six graduate credit hours. The student holding such an award is expected to resign the award at the time the dissertation is submitted to the Graduate School if this comes prior to three weeks before the end of the time period for the award. Contact academic department for application material.

GRADUATE INTERNSHIPS

The graduate internship provides an educational experience for students at either the master's or doctoral level who wish or are required as a part of their program of studies to devote their primary effort toward applied activities in an academic program or a community-based agency or business under the direct supervision of a qualified representative of the host agency or business. Such internship activities may be unpaid or paid. Paid internships are externally sponsored and include the following categories: (a) paid through the University as graduate assistants; (b) paid by an agency or business as an employee; or (c) paid by an agency or business as a consultant. Requests for information should be directed to one's department.

TRAINEESHIPS

Individual departments often are able to provide traineeships. Information about these awards should be directed to the department to which one has been admitted or is seeking admission.

GRADUATE FELLOWSHIPS

The Graduate School offers a number of graduate fellowships. The number varies depending on the funds available for these awards each year. All awards of this type are highly competitive based upon scholarship, scores on standardized tests, and potential for success in graduate study.

Master's Fellowship Program

The Master's Fellowship is a one-time award at the master's degree level that is designed for those nominees who show the greatest promise for scholarly and professional achievement in their respective disciplines. The fellowship will be awarded for three semesters, fall, spring, and summer for a total of eleven (11) months. The Master's Fellowship pays a monthly stipend and provides a tuition scholarship for fall, spring, and summer. Master's students are not allowed to hold more than two calendar years (24 months) of financial support of all types. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a 10-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award, except with permission by the graduate dean.

Applications for these awards should be made by mid-February preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application forms and information about the awards may be obtained by

contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Doctoral Fellowship Program

The Doctoral Fellowship is designed for those nominees who show the greatest promise for scholarly and professional achievement in their respective disciplines at the doctoral level. It is renewable for another year contingent upon eligibility. Fellowships will be awarded for three semesters, fall, spring, and summer for a total of eleven (11) months. The Doctoral Fellowship pays a monthly stipend and provides a tuition scholarship for fall, spring, and summer. Doctoral students have a limit of 4 calendar years (48 months) of financial support of all types. Doctoral students are also limited to two years of financial support of any combination of doctoral fellowship or dissertation research assistantship. Morris fellow holders are ineligible to apply for a Doctoral fellowship award. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a ten-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award except with permission by the graduate dean.

Applications for these awards should be made early January preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application forms and information about the awards may be obtained by contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Delyte and Dorothy Morris Doctoral Fellowship Program

The Delyte and Dorothy Morris doctoral fellowships have been established by Southern Illinois University Carbondale to honor a distinguished former president and his wife. During Dr. Morris' tenure as president (1949-71) the University grew to be a comprehensive research institution and established doctoral programs in twenty-two fields, now twenty-six fields.

The Morris Doctoral Fellowship is designed for those nominees who are new to Southern Illinois University Carbondale (SIUC). This fellowship is intended for applicants who possess exceptional credentials as indicated by high scholastic standing, excellent scores on standardized tests, outstanding recommendations, and evidence of significant potential for research and publication.

The Morris Fellowship is a five-year financial support package. The Graduate School provides a fellowship

award for the first three years and the department provides a graduate assistantship for the last two years. The stipend amount for this award is \$20,000.00 annually, with an annual \$1,000 book/travel allowance for the first three years. A tuition scholarship will be awarded for fall, spring, and summer semesters for the term of the award. Fellows may not hold jobs outside the University, since the purpose of the fellowship is to provide students with an opportunity to devote full time to their graduate studies and research rather than work part time at a job and part time at studies. Fellowship recipients will be assigned a ten-hour per week research assignment that will provide professional development opportunities for the student and be of value to the department. Fellowship recipients must remain on campus as fulfillment of their award except with permission by the graduate dean.

Applications for these awards should be made early January preceding the academic year for which the award is desired. Students should check with their academic departments for exact dates. Application forms and information about the awards may be obtained by contacting the department to which one has been admitted or is seeking admission or on the Graduate School website.

Graduate Dean's Fellowship Program

The Graduate Dean's Fellowship is designed for traditionally underserved individuals who have overcome social, cultural or economic conditions that have adversely affected their educational progress. Awards will be given to students who are qualified by the usual indicators of promise for success in graduate study.

The Graduate Dean's Fellowship is a two-year award, and it is given to fully admitted students. In Year One, the recipient is awarded a monthly stipend of \$1,426.00 for master's and \$1,546.00 for doctoral students for fall, spring and summer, for a total of 11 months. The student must enroll for a minimum of nine graduate credit hours for fall and spring semesters and three graduate hours for summer. The recipient will be assigned a 10-per week research assignment that will provide professional development opportunities and will be of value to the department. Year two, the recipient will be on a 20 hours per week, nine-month (fall and spring) assistantship appointment with the department. The student is required to enroll for a minimum of eight graduate credit hours for fall and spring semesters, or optional summer enrollment of three graduate credit hours. A tuition scholarship is awarded for fall, spring, and summer for both years. Recipients are responsible for fees. While on fellowship the award recipient will not hold any other employment inside or outside the University. Application requests for this award should be directed to the Graduate School or to the department. Application deadline is mid-February preceding the academic year for which the award is desired.

Proactive Recruitment of Multicultural Professionals for Tomorrow (PROMPT) Fellowship/Assistantship Program

The PROMPT Program (Proactive Recruitment of Multicultural Professionals for Tomorrow) is an initiative developed by the Graduate School of Southern Illinois University Carbondale (SIUC) to increase the number of individuals receiving advanced degrees in the United States from families which have traditionally not had access to the opportunities of higher education and who, through his or her life and/or cultural experiences, have unique and potentially positive contributions to make to the program, the discipline, and in the larger academic community. The Graduate School, in alliance with participating academic departments, will provide financial assistance packages to competitive, fully admitted students to pursue advanced study at SIUC through an assistantship appointment. The PROMPT Fellowship/Assistantship offers a two-year assistantship appointment with a monthly stipend and a tuition scholarship. The student must commit 20 hours per week in teaching or research activities in the academic department during fall and spring semesters for both years. Recipients are responsible for fees. Application requests for this award should be directed to the Graduate School or to the department. Application deadline is mid-February preceding the academic year for which the award is desired.

TUITION SCHOLARSHIPS

A limited number of tuition scholarships are awarded each semester to graduate students on the basis of scholarship. The award is for remission of tuition; fees must be paid. Students may receive a tuition scholarship for a maximum of three semesters during their enrollment in the University.

To be eligible the student must be admitted to the Graduate School and to a department, and the student may not hold another University appointment which provides a tuition scholarship. Tuition scholarship recipients must enroll for a minimum of 9 graduate credit hours each semester (3 graduate credit hours in summer). There is no service requirement other than the duties required by a department of all students regardless of their source of support.

Application forms are available on the Graduate School website at

http://www.gradschool.siu.edu/tuition_scholarship.htm

Students should submit application forms at least one full semester preceding the semester for which the tuition scholarship is requested. Deadline dates are as follows: April 15 for summer session, July 15 for fall semester, and November 15 for spring semester.

A limited number of tuition waivers are available to international students who have completed at least one full year at SIUC. Applications are generally available at the end of each spring semester at International Students &

Scholars, Northwest Annex, Wing B, Room 133. Guidelines are provided with the applications.

FINANCIAL AID OFFICE

Other forms of financial assistance including part-time employment on and off campus, cooperative work-study programs, summer employment, and student loan funds are available on the Financial Aid office website at <http://www.siu.edu/~fao/>.

EXTERNAL SUPPORT FOR GRADUATE STUDY

Fellowships, grants-in-aid, scholarships, and other similar awards for the support of graduate students are available from many sources outside the University. Students are encouraged to apply for such awards. Information concerning appropriate external sources of support may be obtained from the Office of Research Development and Administration or from department chairs or directors of graduate studies of the student's major department.

FACULTY APPOINTMENTS

No student in a graduate degree program shall be appointed to any full-time faculty position in the department (or equivalent unit) while enrolled in the unit as a student, with the sole exception that a student who has already been admitted to candidacy for the doctoral degree may be granted a term appointment as an instructor in the unit while so enrolled. Such a term appointment shall not be renewable beyond a period of one year.

SATISFACTORY PROGRESS POLICY FOR GRADUATE STUDENTS

Purpose

The federal government, the states, and southern illinois university carbondale (siuc) have invested large sums of money in order to provide financially needy students the opportunity to obtain a post-secondary education. financial aid recipients are responsible for using the funds provided in an acceptable manner. therefore, a student who wishes to benefit from the receipt of financial aid funds must maintain "satisfactory progress" as defined in this policy.

Authority

The Higher Education Act of 1965 as amended and the final regulations set forth by the Department of Education in 34 CFR 668 require that institutions of higher education establish reasonable standards of "satisfactory progress." A student who does not meet these standards is not eligible to receive federally-funded financial aid. In most instances, SIUC shall make these standards applicable to all state and institutional aid programs for the purpose of maintaining a consistent and reasonable financial aid policy. However, nothing in this policy shall be construed as a reduction of external requirements by other federal, state, public, or private agencies when they award or control financial aid. Non declared graduate students are

only eligible to be considered for a Federal Direct Stafford Loan during one twelve-month period while preparing for admission into a graduate degree program.

Satisfactory Progress Standards

SIUC requires that a student be making "satisfactory progress" toward a degree if he or she wishes to receive financial aid funds. A graduate student is making "satisfactory progress" toward a degree if successfully meeting each of three academic standards:

1. Minimum SIUC Percentage of the Cumulative Attempted Credit Hours that must be Completed:

A graduate student is expected to have completed a minimum of 70% of the cumulative attempted credit hours at SIUC.

2. Maximum Credit Hours Attempted: A graduate student enrolled in a program leading to a Masters Degree is expected to complete the degree before accumulating seventy five (75) credit hours attempted including both SIUC and accepted transfer credit hours. A graduate student enrolled in a program leading to a Masters of Fine Arts Degree is expected to complete the degree before accumulating ninety (90) credit hours attempted including both SIUC and accepted transfer credit hours. A graduate student enrolled in a program leading to a Doctoral Degree is expected to complete the degree before accumulating one hundred (100) credit hours attempted including both SIUC and accepted transfer credit hours.

3. Minimum Grade Point Average: A graduate student must maintain a cumulative grade point average of 3.0 at the end of each spring semester and be in compliance with the University's policy concerning academic standing, grades, and grade point average as defined under the topic "Retention" and all other provisions in the current Graduate Catalog. A graduate student who is academically suspended from the Graduate School is not making satisfactory progress.

The academic records of all aid recipients will be reviewed annually at the end of the spring semester to determine continued aid eligibility. A graduate student who does not meet any one of the three standards set forth above is not maintaining "satisfactory progress" toward a degree and will be granted a **one time only** probationary period. At the end of the probationary period, the student must have rectified the deficiency and be in compliance with all other established criteria in order to be considered eligible for federal financial aid. Only one such probationary period will be granted a student during graduate studies.

Notification Of Status

It shall be the responsibility of the Graduate School to publish this policy and to notify by letter any graduate student who is no longer eligible to receive financial aid funds. Said notice shall be addressed to the student's most current permanent address on file with the University. 17

SHALL BE THE RESPONSIBILITY OF THE STUDENT TO INFORM THE UNIVERSITY OF A CORRECT PERMANENT ADDRESS AT ALL TIMES.

Reinstatement

Students will have their eligibility to receive financial aid reinstated after having reached the level of satisfactory progress required of them by this policy. They may achieve this status by receiving passing grades for courses previously incomplete or incorrectly recorded as withdrawals or failing grades and/or earning sufficiently more than the required percentage of completed hours.

Appeals

Any student shall have the opportunity to appeal, in writing, to explain "mitigating circumstances". The appeal should be sent to the Graduate School, with endorsement of the student's academic program, within 30 days of the notice of termination. The Graduate School will review the "mitigating circumstances" documented in the appeal and provide a written decision within 20 days after the receipt of the appeal. The Graduate School will provide written notification to the Financial Aid Office concerning all graduate students who have been granted an exception for mitigating circumstances.

Definitions

Attempted credit hours shall be defined as the total SIUC hours for which the student has been enrolled.

Maximum credit hours attempted shall be defined as the total SIUC hours for which the student has been enrolled at SIUC and the total accepted transfer credit hours.

Credit hours completed shall be defined as the total number of academic credit hours which a student has completed. Failing grades, incompletes, withdrawals, audits, and remedial courses that do not count toward a degree shall not be considered as credit hours completed. Deferred grades count as credit hours completed.

Eligible students shall be defined as those students who are admitted to the Graduate School and to a specific degree program. All other students are not eligible for financial aid except for non declared graduate students who are only eligible to be considered for a Federal Direct Stafford Loan during one twelve-month period while preparing for admission into a graduate degree program.

Mitigating circumstances are the reasons that explain why the student has not met the Satisfactory Progress standards and can include medical reasons, family crisis, personal problems, or other circumstances which adversely affected student performance.

Probationary period is a one year period in which the student who does not meet the requirements of satisfactory progress is eligible for financial aid.

Graduate shall be defined as a student who is seeking a Masters or a Doctorate degree.

Tuition and Fees

Tuition and fees are established by the Board of Trustees and are subject to change whenever conditions necessitate. All assessments are on a per-hour basis, with 12 hours considered full time. Current tuition and fee can be found on:

<http://www.gradschool.siu.edu/tuition&fees.html>.

The fees which have been established by the Board of Trustees are payable by all students unless they are specifically exempted by the Board of Trustees. All fees are considered to be institutional in nature and require payment regardless of whether or not the student receives direct benefits or is in a location which permits access to such benefits.

Student fees include: student attorney fee, Student Center fee, student activity fee, student recreation fee, campus recreation fee, athletic fee, revenue bond fee, and student medical primary care and extended care (insurance) benefit fees, and mass transit fee. Additional fee information is available on the Registrar's website <http://registrar.siu.edu/records/costs.htm>. Student fees include the following.

- **Student Attorney Fee.** Supports the budget of the Students' Attorney Program.
- **Student Center Fee.** Provides funds for the operation of the Student Center.
- **Student Activity Fee.** Provides funding for student organizations and activities on campus.
- **Student Recreation Fee.** Provides funds for operation of the Student Recreation Center and associated programs.
- **Campus Recreation Fee.** Funds recreational facilities and programs external to the Student Recreation Center.
- **Athletic Fee.** Provides partial funding for the university intercollegiate athletic program.
- **Revenue Bond Fee.** Replaces funds which were previously obtained from tuition payments and used to under-write the funded debt operations of the Student Center and university housing.
- **Student Medical Benefit Primary Care and Extended Care (insurance) Fees.** Provide funding for comprehensive student health programs including emergency service; hospitalization; specialty, primary, emergency dental; counseling services; and prevention program. A student who pays these fees is entitled to full medical benefits at the Student Health Programs. Students who have comparable insurance coverage may be eligible for a refund of the Student Medical Benefit Extended Care (insurance) fee. A refund must be applied for within the first two weeks of each fall and spring semester and within the first week of the summer session.

- **Mass Transit Fee.** Provides funding for bus transportation to on-campus and certain Carbondale locations.

Additional Fee Information

1. Students should refer to the Registrar's website : <http://registrar.siu.edu/records/costs.htm> for specific fee information.
2. Graduate, medical, and law students are not required to pay the Student-to-Student Grant Program Fee.
3. Students taking courses off campus or at approved residence centers are required to pay tuition as listed in the table above but do not pay student fees.
4. Students who combine enrollment in on- and off-campus courses pay tuition only for hours off campus and tuition and fees for hours enrolled on campus.
5. Graduate students registering for Continuing Enrollment, course 601, pay only tuition for credit associated with that course registration. Refer to the section titled Continuing Enrollment Requirement previously in this chapter for the regulations governing this fee.
6. In addition to the above fees, there is a graduation fee. Doctoral degree students are required to pay an \$90.00 fee for electronic submission of their dissertation. Master's degree students are required to pay \$80.00 for electronic submission of their thesis. If copyright is desired, an additional fee of \$65.00 is required.
7. Other charges which students may incur are those for departmental field trips, library fines, and excess breakage. Also, students taking a course involving use of materials, as distinct from equipment, will ordinarily pay for such materials.
8. Students registering for courses on an audit basis pay the same tuition and fees as though they were registering for the courses for credit.
9. Out-of-state students will find the official University regulations governing determination of residency status for assessment of tuition later in this chapter.
10. Graduate students who reside in the Kentucky counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union will be assessed tuition at the Illinois Resident rate.
11. Graduate students who are residents of Missouri, and who enroll in up to 6 semester hours in a semester, will be assessed tuition at the Illinois Resident rate. Those who register for more than 6 semester hours in a semester will be assessed the non-resident rate for all hours enrolled.
12. Students whose permanent home address is in Arkansas, Indiana, Kentucky, Missouri or Tennessee,

will pay an alternate tuition rate equivalent to the in-state rate

13. For the purposes of tuition assessment, all faculty, staff (including Civil Service employees), and graduate assistants, as well as their spouses and dependent children, shall be considered as resident students.
14. An identification card fee of \$10.00 will be charged to all first-time SIUC students who register for on-campus credit. This is a one-time charge. For additional information please contact the Student Center ID Card Office.

Payment and Refunding of Tuition and Fees

Tuition and fees are payable each semester during the academic year. Students who register in advance receive a Statement of Account in the mail and may pay either by mail or in person at the Bursar's office, by the deadline date, in accordance with instructions accompanying the statement. Otherwise their advance registration is cancelled and they must register again later. Students who register at the start of a semester must pay tuition and fees according to the schedule which is in effect at that time. More detailed information is on the Registrar's website:

<http://registrar.siu.edu/records/costs.htm>.

Students who process a program change which places them in a different tuition and fee category than the one for which they originally registered will be billed additional tuition and fees when appropriate. If the change places them in a smaller tuition and fee category and if they have processed the program change within the first two weeks of the semester, they will receive an automatic credit to their account.

A credit for tuition and fees will be made to student accounts for students who officially withdraw from school by the withdrawal deadlines listed later in this chapter. They will receive a refund check in approximately four weeks after the withdrawal has been received by the Records and Registration Office. No credit for tuition and fees is made for withdrawal occurring after the deadlines, except as described in the next paragraph.

Special consideration is extended to individuals who leave school for extended military service (6 months or longer). Students will be refunded full tuition and fees paid if they enter military service during the first five weeks of school. If students withdraw during the sixth through tenth weeks of school, they will be refunded half of the paid tuition and fees, and they will receive one-half credit without letter grades for the courses in which they were receiving a passing grade at the time of withdrawal. When the withdrawal occurs after the tenth week, students will receive no refund, but will receive both grades and credit hours for the courses in which they are passing. In all instances, a copy of the

military orders or a letter from the commanding officer is required for verification of impending military service. To be eligible for these benefits students must remain in school to within ten days of their military reporting date.

Deferment of Tuition and Fees

Students who are experiencing a delay in the receipt of verified financial assistance through the Financial Aid office may be eligible for a cancellation waiver. If granted, a cancellation waiver prevents a student's registration from being cancelled even though tuition and fees have not been paid by the publicized cancellation date.

Information concerning cancellation waiver procedures is available from the Financial Aid office and the office of the Graduate School. This information is also published in the *Daily Egyptian* each term. Guidelines may vary from term to term and year to year so students are advised to seek out accurate information rather than assume they qualify.

Determination of Residency Status

For the purpose of these regulations an *adult* is considered to be a student eighteen years of age or over; a *minor* student is a student under eighteen years of age. The term "the State" means the State of Illinois except in the following instances: (1) for the purposes of assessing graduate tuition, the chancellors, with the agreement of the president, may take the term "the State" to include the Kentucky counties of Ballard, Caldwell, Calloway, Carlisle, Crittenden, Fulton, Graves, Hickman, Livingston, Lyon, McCracken, Marshall, Trigg, and Union. (2) For the purposes of assessing graduate tuition for not more than six hours the chancellors, with the agreement of the president, may take the term "the State" to include the State of Missouri; students who take more than six hours per term will be charged out-of-state tuition for all semester hours taken during the term. Except for those exceptions clearly indicated in these regulations, in all cases where records establish that the person does not meet the requirements for Resident status as defined in these regulations the non-resident status shall be assigned.

Determination of residence status of each applicant for admission to the University is made at the time of admission. A student may petition for change to Illinois residency by contacting the Graduate Registration office to obtain the necessary forms and information. A student may be reclassified at any time by the University upon the basis of additional or changed information. However, if the University has erroneously classified the student as a Resident, the change in tuition shall be applicable beginning with the term following the reclassification; if the University has erroneously classified the student as a nonresident, the change in tuition shall be applicable to the term in which the reclassification occurs, provided the student has filed a written request for review in accordance with these regulations. If the University has classified a student as a Resident based on false or falsified documents, the reclassification to non-

resident status shall be retroactive to the first term during which residency status was based on the false or falsified documents.

Adult Student. An adult, to be considered a Resident, must have been a bona fide resident of the State for a period of at least six consecutive months immediately preceding the beginning of any term for which the individual registers at the University, and must continue to maintain a bona fide residency in the State, except that an adult student whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Minor Student. The residence of a minor shall be considered to be, and to change with and follow:

- a. That of the parents, if they are living together, or the living parent, if one is dead; or
- b. If the parents are separated or divorced, that of the parent to whom the custody of the person has been awarded by court decree or order, or in the absence of court decree or order, that of the parent with which the person has continuously resided for a period of at least six consecutive months immediately preceding registration at the University; or
- c. That of the adoptive parents, if the person has been legally adopted and, in the event the adoptive parents become divorced or separated, that of the adoptive parent whose residence would govern under the foregoing rules if that parent had been a natural parent; or
- d. That of the legally appointed guardian of the person; or
- e. That of the *natural* guardian, such as a grandparent, adult brother or adult sister, adult uncle or aunt, or other adult relative with whom the person has resided and by whom the student has been supported for a period of at least six consecutive months immediately preceding registration at the University for any term, if the person's parents are dead or have abandoned said person and if no legal guardian of the person has been appointed and qualified.

Parent or Guardian. No parent or legal or natural guardian will be considered a resident of the State unless said person (a) maintains a bona fide and permanent place of abode within the State, and (b) lives, except when temporarily absent from the State with no intention of changing the legal residence to some other State or country, within the State.

Emancipated Minor. If a minor has been emancipated, is completely self-supporting, and actually re-

sides in the State, the minor shall be considered to be a Resident even though the parents or guardian may reside outside the State. An emancipated minor who is completely self-supporting shall be considered *to actually reside in the State of Illinois* if a dwelling place has been maintained within the State uninterrupted for a period of at least six consecutive months immediately preceding term registration at the University. Marriage or active military service shall be regarded as effecting the emancipation of minors, whether male or female, for the purposes of this regulation. An emancipated minor whose parents (or one of them if only one parent is living or the parents are separated or divorced) have established and are maintaining a bona fide residence in the State and who resides with them (or the one residing in the State) or elsewhere in the State will be regarded as a Resident student.

Married Student. A non-resident student, whether male or female, or a minor or adult, or a citizen or non-citizen of the United States, who is married to a resident of the State, may be classified as a Resident so long as the individual continues to reside in the State; however, a spouse through which a student claims residency must demonstrate residency in compliance with the requirements applicable to students seeking Resident status. For example, a noncitizen student who holds a visa which on its face precludes an intent to reside in the United States is not entitled to in-state residency through his/her marital status.

Persons without United States Citizenship. A person who is not a citizen of the United States of America who meets and complies with all of the other applicable requirements of these regulations may establish residence status unless the person holds a visa which on its face precludes an intent to reside in the United States.

Armed Forces Personnel. If a person is on active military duty in one of the Armed Forces of the United States and is stationed in Illinois, then the Board shall deem that person and any of his or her dependents Illinois residents for tuition purposes.

If a person is on active military duty in one of the Armed Forces of the United States and is stationed out-of-State, but he or she was stationed in this State for at least three years immediately prior to being reassigned out-of-State, then the Board shall deem that person and any of his or her dependents Illinois residents for tuition purposes, as long as that person or his or her dependent (i) applies for admission to the University within 18 months of the person on active military duty being reassigned or (ii) remains continuously enrolled at the University.

A person who is separated from active military service will be considered a Resident of Illinois immediately upon separation providing the person: (a) was a resident of the State at the time of enlistment in the military service, (b) became treated as a Resident while in the military by attending school at Southern Illinois University while stationed

within the State, or (c) has resided within the State for a period of six months after separation.

State and Federal Penitentiary. A person who is incarcerated in a State or Federal place of detention within the State of Illinois will be treated as a Resident for tuition assessment purposes as long as said person remains in that place of detention. If bona fide residence is established in Illinois upon release from detention, the duration of residence shall be deemed to include the prior period of detention.

Minor Children of Parents Transferred Outside the United States. The minor children of persons who have resided in the State for at least six consecutive months immediately prior to a transfer by their employers to some location outside the United States shall be considered Residents. However, this shall apply only when the minor children of such parents enroll in the University within five years from the time their parents are transferred by their employer to some location outside the United States.

Dependents of University Employees. For the purposes of tuition assessment, all faculty and staff (including civil service employees), as well as their spouses and dependent children, shall be considered as resident students.

Dependents of Graduate Assistants and Fellows. The non-resident portion of tuition is waived for the spouses and dependent children of fellows, assistants and trainees who are appointed as fellows, assistants and trainees to the fullest extent permitted by their appointment.

Definition of Terminology. To the extent that the terms *bona fide residence*, *independent*, *dependent*, and *emancipation* are not defined in these regulations, definitions shall be determined by according due consideration to all of the facts pertinent and material to the question and to the applicable laws and court decisions of the State of Illinois.

A bona fide residence is a domicile of an individual which is the true, fixed, and permanent home and place of habitation. It is the place to which, whenever absent, the individual has the intention of returning. Criteria to determine this intention include but are not limited to year around residence, voter registration, place of filing tax returns (home state indicated on federal tax return for purposes of revenue sharing), property ownership, driver's license, car registration, vacations, and employment.

Procedure for Review of Residency Status or Tuition Assessment. A student who takes exception to the residency status assigned or tuition assessed shall pay the tuition assessed but may file a claim in writing to the appropriate official for a reconsideration of resi-

dency status and an adjustment of the tuition assessed. The written claim must be filed within 30 school days from the date of assessment of tuition or the date designated in the official University calendar as that upon which instruction begins for the academic period for which the tuition is payable, whichever is later, or the student loses all rights to a change of status and adjustment of the tuition assessed for the term in question. If dissatisfied with the ruling in response to the written claim made within said period, the student may appeal the ruling to the chancellor or his/her designee by filing with the appropriate official within twenty days of the notice of the ruling a written request.

University Employees

All full-time University employees who wish to use the employee tuition and fee waiver (faculty and staff) who are classified as graduate students must seek approval of the Graduate School to enroll in more than six semester hours of courses.

Faculty and Staff

Employees who are seeking a waiver of tuition, must apply for the waiver each term by completing an Application for Tuition Waiver form. A form may be obtained from Human Resources, 806 S. Elizabeth St. or from the Graduate Registration Office, Woody Hall, B104. The form must be completed each term and returned to Human Resources, 806 S. Elizabeth St. The waiver benefit does not limit the number of credit hours that may be taken. The amount of the waiver will be credited to the student's account after the employment status has been verified and the application form has been processed.

Employees can phone the Graduate Registration Office (618-453-2969) for any questions regarding the registration process. Questions regarding the tuition waiver should be directed to Human Resources (618-453-6698).

Student Conduct Code

[The following was approved on May 1991, with amendments on October 3, 1997, May 22, 2001, August 15, 2003, and August 10, 2008, in accordance with provisions set forth in SIUC Board of Trustees 3 *Policies C*.]

I. INTRODUCTION

A. Preamble

Southern Illinois University Carbondale (SIUC) is dedicated not only to learning, research, and the advancement of knowledge, but to the development of ethical and responsible citizens. By accepting membership in SIUC, an individual joins a community characterized by free expression, free inquiry, honesty, respect for others, and participation in constructive change. All students are presented with rights, privileges, and opportunities by choosing to become a part of the SIUC community. Students, faculty, staff, and alumni make a commitment to furthering the missions of Southern Illinois University Carbondale.

In order for SIUC community members to accomplish their goals and uphold the mission of the university, they must assume responsibility for their actions and respect the rights of others. As such, SIUC expects and requires all of its students upon admission to the University to develop, adhere to, and maintain high standards of scholarship and conduct. The *Student Conduct Code* is the guiding document for SIUC community standards, and outlines all rights and responsibilities afforded to SIUC students.

B. Southern Illinois University Carbondale Student

To be a Southern Illinois University Carbondale student, one is expected to respect the values of the university, while still recognizing the individual strengths and differences unique to each member of our community. While *The Saluki Creed* does not establish policy under the Student Conduct Code, it does establish expectations of students as members of the SIUC community, and reads as follows:

The Saluki Creed

The community of scholars at Southern Illinois University Carbondale is dedicated to personal and academic excellence. Choosing to join the community obligates each member to a code of civilized behavior.

As members of our University community, we commit ourselves to the ideals of SIUC and express our commitment through the following creed:

As a Saluki, I pledge to exalt beauty.

I will celebrate the uniqueness of our campus, our region, and our people. I will revere and protect the natural and cultural environment that distinguishes the campus and the region of Southern Illinois.

As a Saluki, I pledge to advance learning.

I will practice personal and academic integrity. I will participate as an active learner to the maximum of my potential. I will demonstrate concern for others by developing, encouraging, and maintaining an environment conducive to learning.

As a Saluki, I pledge to forward ideas and ideals.

I will discourage bigotry and celebrate diversity by striving to learn from differences in people's ideas, and opinions. I will embrace the ideals of freedom of civilized expression, intellectual inquiry, and respect for others.

As a Saluki, I pledge to become a center of order and light.

I will respect the rights and property of others. I will know and understand the ideals and values of this community of scholars and will strive to incorporate them in my daily life. I will fulfill my responsibility as a citizen-scholar by striving to make this campus and community a better place.

C. Purpose and Application

Southern Illinois University Carbondale is charged by the State of Illinois and the Southern Illinois University Board of Trustees with the responsibility for the development and administration of institutional policies and rules governing the role of students and their behavior, pursuant to 3.C *Policies* of the Board of Trustees. These policies authorize the Chancellor of SIUC to develop standards for student rights and conduct. The *Student Conduct Code* contains statements of those University standards and policies relevant to the academic and co-curricular experience.

The University community is not a sanctuary from the law, and all students of the University are subject to federal, state, and local law. This document forms the basis for student behavioral expectations in the SIUC community and the greater community at large. The standards of conduct apply to students while on University-owned or -controlled property, when attending University-sponsored events off campus, or when such conduct involves the security or integrity of the University community.

In addition, the University is a forum for the free expression of ideas. The development and enforcement of these standards of behavior is designed to foster students' personal, social, and ethical development. These standards serve to promote the protection of the rights, responsibilities, health and safety of the SIUC community, so that its members may pursue educational goals.

D. Student Rights and Responsibilities

The following statement of student rights and responsibilities is intended to reflect the base upon which the *Student Conduct Code* document is built.

Student Rights

- A student has the right to participate in a free exchange of ideas, and there shall be no University policy that in any way abridges the rights of free inquiry, expression, assembly, and procedural due process.
- A student has the right to freely examine all questions of interest and to express opinions.
- A student has the right to be free from discrimination, including harassment, on the basis of race, color, national or ethnic origin, religion, sex, disability, age, sexual orientation, or veteran status in accordance with applicable federal, state, and local laws.
- A student has the right to personal privacy except as otherwise provided by law and University policy.
- Each student subject to disciplinary action arising from alleged violations of the *Student Conduct Code* will be assured procedural due process.

Student Responsibilities

- A student has the responsibility to be fully acquainted and comply with the published *Student Conduct Code* in its entirety and to comply with the policies of the Code as well as all federal, state, and local laws, and all university policies and procedures.
- A student has the responsibility to recognize that student actions reflect upon the individuals involved and may have consequences for the entire University community.

E. Student Relation to University Community

Southern Illinois University Carbondale, as an institution of higher education, and any division or agency which exercises direct or delegated authority for the institution, have rights and responsibilities of their own, including:

- To provide opportunities for students of the University to present and debate public issues.
- To require persons on University-owned or -controlled property to present appropriate identification to authorized personnel.
- To establish reasonable standards of conduct for all persons on the campus in order to safeguard the educational process and to provide for the safety and welfare of students, visitors, faculty, staff, and University property.
- To restrict students of the University from using its name, finances, physical and operating facilities for commercial activities or other activities that may bring dishonor upon the institution.
- To provide, for registered student groups of the University, use of campus facilities under the approved policies of the University.

F. Student Relationships with the External Community

Students attending the University take on responsibilities not only of campus citizenship but also community citizenship. When community standards are not respected

and upheld by students, conflicts between students and other community members may result. Such conflicts are destructive to relationships in the community and detrimental to the image of the University, as well as to the reputation of the student body.

G. Title and Enforcement

This document is titled the Student Conduct Code for Southern Illinois University Carbondale. The responsibility for the enforcement of this code rests with the Chancellor of Southern Illinois University Carbondale. Where appropriate and/or necessary, the university will cooperate fully with law enforcement and other agencies administering a rehabilitative or correctional program for any registered SIUC student.

H. Jurisdiction

The University community has a responsibility to provide its members those privileges, opportunities, and protections that encourage and maintain an environment conducive to educational development.

1. This policy applies to:

- a. Conduct occurring on any property owned, operated or controlled by the university.
- b. Conduct occurring while using university-owned, leased or rented vehicles, or vehicles leased with student-appropriated funds.
- c. Conduct occurring off-campus, including by not limited to:
 - i. Events and meetings sponsored by university-recognized student organizations.
 - ii. Meetings or events when students represent the university or university-recognized organizations.
 - iii. Off-campus housing zoned by the City of Carbondale as a fraternity or sorority and displaying Greek letters or the name of the fraternal organization.
 - iv. Practicum, internship, student field trip, student teaching, clinical settings, extension centers, residence centers, and independent study settings.
 - v. Other off-campus conduct that substantially interferes with the mission of the university including interference with the educational pursuits of its students, faculty or staff. The appropriate Vice Chancellor will define any activity that falls into this category.

2. When officially notified, the university reserves the right to initiate disciplinary proceedings for violations of the Student Conduct Code where the university has jurisdiction under section H, even if criminal charges are brought forward by the appropriate authority. Disciplinary actions by the university are independent of any criminal or civil proceedings.

3. Academic dishonesty violations in the School of Law will be administered through the Professional Ethics Policy of the SIUC School of Law.
4. Academic dishonesty violations in the School of Medicine will be administered through the SIUC School of Medicine Student Progress System.
5. Law students and medical students on the Carbondale campus charged with other violations of this code will be subject to the disciplinary procedures outlined in the *Student Conduct Code*, in addition to being charged under their respective school-specific policies or systems outlined in H.3 and H.4.

I. Burden and Standard of Proof

1. The standard of proof used for conduct hearings shall be a preponderance of the evidence, or "more likely than not".
2. The burden of proof will rest with the University, except on appeal. If a decision is appealed, the burden of proof rests with the student.

J. Definitions

1. "Academic Officer": any instructor, department Chair, Dean, Director, or Coordinator within Academic Affairs or the Center for Academic Success.
2. "Accused Student": any student or students who have had disciplinary charged filed against them.
3. "Address": the local address on record with Records and Registration.
4. "Adjudication": the formal resolution of disciplinary charges, including the appeal process.
5. "Admission": admission, readmission, re-entry, registration, and re-registration as a student in any educational program at Southern Illinois University Carbondale.
6. "Advisor": any person selected by the student, whether faculty, staff, student or non-university individual (including a lawyer) to assist the student in the preparation to address a charge(s). A principal or witness to an incident may not serve as an advisor.
7. "Advisory Review Board": a panel of faculty, staff and students that hears appeals involving suspensions and expulsions and advises the Chancellor.
8. "Appeal": a process for reviewing an earlier decision.
9. "Board": the Board of Trustees of Southern Illinois University.
10. "Chancellor": that individual appointed by the Board as the chief operating, administrative, and academic officer of Southern Illinois University Carbondale. Whenever the term Chancellor is used in the policy, the term shall apply not only to the person holding the title but also to designees.
11. "Charge": an accusation of a violation of the Student Conduct Code of Southern Illinois University Carbondale.
12. "Code": the Student Conduct Code for Southern Illinois University Carbondale.
13. "Complainant": any university community member who brings forth documentation regarding possible violations of the Student Conduct Code.
14. "Condition": an educational, learning or reparable activity assigned in conjunction with a formal sanction.
15. "Days": all days when university offices are open for business.
16. "Formal" disciplinary procedures are disciplinary procedures used when the question of responsibility is contested or when the student accepting responsibility for the disciplinary charges prefers to have a full hearing on the sanction.
17. "Informal" disciplinary procedures are disciplinary procedures used when the question of responsibility is not contested and the student prefers to have an immediate decision on the sanction.
18. "Instructor": any member of the faculty or teaching assistant.
19. "Members of the campus community": the members of the Board of Trustees, employees, volunteers and students of Southern Illinois University Carbondale.
20. "Notification": a method of contacting a student including telephone, mail service, hand delivery, and e-mail.
21. "Sanction": a formal measure imposed as a result of violation of this code.
22. "Standard of proof": a preponderance of the evidence.
23. "Student": all persons taking courses at the University, either full-time or part-time, pursuing undergraduate, graduate or professional studies. Persons who withdraw after allegedly violating the Student Conduct Code, who are not officially enrolled for a particular term but who have a continuing relationship with the University or who have been notified of their acceptance for admission are considered to be students as are persons who are living in University Housing, although not enrolled in this institution.
24. "Student Conduct Board": a panel of trained students convened to adjudicate cases of social misconduct.
25. "University": Southern Illinois University Carbondale.
26. "University official": any individual authorized or directed by the Chancellor to perform any delegated function.
27. "Vice Chancellor": the chief officer of the division of either Academic Affairs (also called the Provost)

or Student Affairs. Whenever the term Vice Chancellor is used, the term not only applies to the person holding the position but also to designees.

28. "Violation": a breach of conduct governed by this code.

II. STANDARDS

Any student who has committed or has attempted to commit the following misconduct is subject to the disciplinary sanctions and conditions as outlined in Sections VI and VII.

A. Acts of Academic Dishonesty

In keeping with the principles and values of the University, students shall not:

1. Plagiarize or represent the work of another as one's own work;
2. Prepare work for another that is to be used as that person's own work;
3. Cheat by any method or means;
4. Knowingly or willfully falsify or manufacture scientific or educational data and represent the same to be the result of scientific or scholarly experiment or research;
5. Knowingly furnish false information to a university official relative to academic matters;
6. Solicit, aid, abet, conceal, or attempt acts of academic dishonesty.

B. Acts of Social Misconduct

In keeping with the principles and values of the University, Students shall not commit any of the following:

1. **Violence**
 - a. Sexual Misconduct (includes any form of coerced or unwanted sexual activity including, but not limited to, rape or unwanted touching).
 - b. Physical abuse
 - c. Direct threat of violence and/or intimidation
 - d. Participation in any activity to disrupt any function of the university by force or violence
 - e. Violent behavior representing a danger to person(s)
2. **Property Damage**
 - a. Arson
 - b. Willful or malicious damage or destruction of property
3. **Reckless Behavior**
 - a. Reckless behavior representing a danger to person(s) or property
4. **Unauthorized Possession and/or Use of Weapons**
Unauthorized possession on campus means possession without authorization from Director of Department of Public Safety or his/her designee. Weapons include but are not limited to:

- a. Firearms
- b. Explosives and explosive devices
- c. Pellet guns, BB guns, air guns, and any other object a reasonable person may believe to be a gun
- d. Switchblade knife, butterfly knife, taser or stun gun, or any other dangerous or deadly weapon.
- e. Any object intended for use as a weapon.

5. Disobedience

- a. Failure to comply with directions of university or public officials acting in the performance of their duty.
- b. Trespassing
- c. Unauthorized entry

6. Deception

- a. Furnishing false information to the university with intent to deceive
- b. Forgery, alteration or misuse of university documents, records and identification cards
- c. Forgery or issuing a bad check with intent to defraud

7. Theft

- a. Stealing
- b. Attempted or actual misappropriation or theft of university funds, supplies, equipment, labor, material, space or facilities
- c. Attempted or actual misappropriation or theft of identity
- d. Possession of stolen property

8. Improper Computer Usage

Actual or attempted abuse of computer time, including but not limited to:

- a. Unauthorized entry into a file to use, read, change, or transfer the contents or for any other purpose
- b. Unauthorized use of another's identification and/or password
- c. Use of computing facilities to interfere with the work of another student, faculty member or university official
- d. Use of computing facilities to interfere with normal operation of the university computing system.
- e. Knowingly causing a computer virus to become installed in a computer system or file
- f. Violations of any computer use policies as established by the Department of Information Technology.

9. Threats to Safety

Any action that knowingly or intentionally endangers the lives of others, including but not limited to:

- a. Intentionally entering false fire alarms
- b. Bomb threats
- c. Tampering with fire extinguishers, alarms or safety equipment

- d. Engaging in any behavior which constitutes a significant fire hazard
- e. Tampering with elevator controls or equipment
- f. Failure to evacuate during a fire, fire drill, or false alarm
- g. Possession and/or use of fireworks

10. Controlled Substances

Controlled substances include, but not limited to: cannabis, cocaine, heroin, acid, LSD, methamphetamine

- a. Manufacture
- b. Sale or distribution
- c. Unauthorized possession and/or use

11. Hazing

Any action required of or imposed on current or potential members of a group which produces or is reasonably likely to produce bodily harm, humiliation or ridicule, substantial interference with academic efforts, or significant impairment or endangerment of physical well-being, regardless of the consent of the participants.

12. Harassment

Harassment is knowing conduct that is not necessary to accomplish a legitimate purpose, would cause a reasonable person emotional distress, and does cause another person distress. It results from intentional acts that cause someone to be worried, anxious or uncomfortable and need not involved any overt act of violence. Information obtained with the consent of an individual which is subsequently disclosed without consent of the same individual shall constitute harassment in violation of this code if such disclosure results in the humiliation or ridicule of the same individual. Intentional obstruction or substantial interference with any person's right to attend or participate in any university function also constitutes harassment.

13. Stalking

- a. A person commits stalking when he or she on at least two separate occasions, follows another person or places the person under surveillance, knowingly and without lawful justification; and
 - 1) at any time transmits a threat to that person of immediate or future bodily harm, sexual assault, confinement, or restraint; or
 - 2) places that person in reasonable apprehension of immediate or future bodily harm, sexual assault, confinement, or restraint.
- b. For the purpose of this section, a person "places a person under surveillance" by remaining present outside the person's place of

residence, classroom, or other building on campus, or by utilizing electronic surveillance equipment for the same purposes.

- c. For the purpose of this section, "follows another person" means
 - 1) to move in relative proximity to a person as that person moves from place to place, or
 - 2) to remain in relative proximity to a person who is stationary or whose movements are confined to a small area, or
 - 3) to utilize electronic surveillance equipment for tracking purposes.
- d. Exemption: This section does not apply to any exercise of the right of free speech or assembly that is otherwise lawful.

14. Disorderly Conduct

A person commits the offense of disorderly conduct when he/she knowingly does any act in such unreasonable manner as to alarm or disturb another and to provoke a breach of the peace.

15. Violations of University Housing standards as compiled in University Housing publications

A student present but not actively involved in an incident arising out of University Housing may be subject to disciplinary action.

16. Violations of Other University Policies or Regulation

This includes, but not limited to, alcohol, demonstrations, pets, smoking, solicitation, and guidelines for access to data and programs stored on the computer.

17. Acts against the Administration of this Code

- This includes, but is not limited to:
- a. initiating of a complaint or charge with knowledge that the charge was false or with reckless disregard of its truth;
 - b. interfering with or attempting to interfere with the hearing process including, but not limited to, intimidation or bribery or attempted bribery of hearing officer, hearing participants, board members or prospective witnesses, acceptance of bribes, dishonesty or disruption of proceedings and hearing held under this code;
 - c. failure to comply with terms or any disciplinary sanction or attached conditions imposed in accordance with this code;
 - d. retaliation against an individual due to their proper participation in, or use of, the student conduct system.

III. INTERIM SUSPENSION

If the Chancellor or Vice Chancellor for Student Affairs has reasonable cause to believe that a serious and direct threat to the safety and well-being of the members of the

campus community will be present if an individual is permitted to remain an active member of the community, an interim suspension may be imposed. During the interim suspension, the student shall be denied access to the campus, and/or to classes, University Housing, and/or all other University activities or privileges for which the student might otherwise be eligible as the Vice Chancellor may determine to be appropriate.

An interim suspension meeting shall be afforded unless it is impossible or unreasonably difficult to conduct such a meeting prior to the interim suspension, in which case the individual shall be afforded the opportunity for such an interim suspension meeting at the earliest practical time. The issue at the interim suspension meeting shall be to determine if any condition specified in this paragraph is present and an interim suspension is warranted. During the interim suspension meeting, the student will be provided a statement of the reasons for interim suspension and will be afforded an opportunity to rebut. Interim suspension is temporary and shall be enforced only until the completion of a full disciplinary hearing. Following are the procedures for imposing and adjudicating an interim suspension.

A. Issuance of Interim Suspension

1. At any time following the submission of a written referral from the Director of Judicial Affairs or the Department of Public Safety, the Chancellor or Vice Chancellor for Student Affairs may alter or suspend the rights of a student to be present on campus, reside in University Housing, have access to different buildings, or to attend classes for an interim period prior to resolution of a disciplinary proceeding. The Chancellor or Vice Chancellor for Student Affairs will base the decision on available information and whether the continued presence of the student on campus reasonably poses a threat to the physical or emotional condition and welfare of any member of the campus community or to the safety and welfare of the university or any of its functions.
2. The decision to suspend the rights of a student for an interim period will be communicated in writing to the student and will become effective upon notification. Notification will be hand-delivered to the student. In cases where the student cannot be reached for hand delivery, notification will be made by registered mail at his/her current address as maintained by Records and Registration. Failure or refusal to accept receipt of notification will not negate or postpone this action.
3. Interim suspension will remain in effect until a final decision has been made on the pending charges or until the Chancellor or Vice Chancellor for Student Affairs determines that the reason for imposing the interim suspension no longer exists.

B. Interim Suspension Hearing

1. The Chancellor or Vice Chancellor for Student Affairs shall provide the suspended student with an opportunity to respond to the conditions which were alleged to have warranted the interim suspension no later than 2 days following the effective date of the interim suspension. The student has the right to an advisor and to present any argument and/or documentation disputing the appropriateness of the interim suspension.
2. The decision of the Chancellor or Vice Chancellor for Student Affairs may be rendered orally but shall be confirmed in writing within 2 days after the hearing with written notice provided to the student either delivered personally or, in cases where the student cannot be reached for hand delivery, by registered mail at his/her current address as maintained by Records and Registration.
3. If the Chancellor or Vice Chancellor for Student Affairs determines that conditions specified above are not present or that an interim suspension is not warranted, the case shall proceed as a formal adjudication as provided in section V.C.
4. When an interim suspension is imposed, a hearing on the underlying allegations of misconduct shall be held within 5 days of the imposition of the interim suspension unless the student agrees to a later date.

C. The decision of the Chancellor or Vice Chancellor for Student Affairs to impose an interim suspension in accordance with this section shall be final, pending resolution of the disciplinary charge.

IV. PROCEDURES APPLICABLE TO ACADEMIC DISHONESTY

A. Jurisdiction

1. Department Level:
The department chair shall have initial jurisdiction over complaints of academic dishonesty and may resolve the case if the student accepts responsibility for the violation. In a case where the student does not accept responsibility for the violation, the chair shall review the complaint of alleged academic dishonesty and decide whether there are sufficient grounds to formally charge the student with a violation of this code. When social misconduct is also involved in an incident of academic dishonesty, the chair in consultation with the Director of Student Judicial Affairs may charge the student with all violations. All charges shall be adjudicated under the procedures for academic dishonesty.

2. College Level

Each Dean has the responsibility for the formal resolution of charges against a student. For the purpose of administering these standards, the Graduate School Dean shall operate at the level of other Deans. Charges of falsifying information on applications for admission shall originate from the Director of Admissions, but the appropriate Dean will have responsibility for adjudication.

B. Informal Resolution

1. Informal Hearing:

In cases where the student admits to a violation of the standards relating to academic dishonesty, the matter may be resolved at the department level. An informal discussion between the instructor and the student shall be held.

- a. If the student accepts responsibility, the instructor shall inform the department chair and the student whether, as a sanction for the violation, the instructor will assign a failing grade for the work and/or course. The instructor shall also recommend to the chair any other sanction that may be imposed, pursuant to IV.B.2.
- b. The chair shall meet with the instructor and the student, receive the acknowledgement of responsibility from the student, receive the recommendation from the instructor, and apprise the student of the sanction.

2. Sanctions:

The Chair shall consider the full disciplinary history of the student in determining sanctions. Sanctions which may be imposed when the student accepts responsibility for the conduct are as follows:

- a. The instructor may assign the student a failing grade for the work and/or course.
- b. The student may be placed on disciplinary probation.
- c. The student may be suspended from the class for the remainder of the semester.
- d. Any combination of the above.
- e. The department Chair may recommend to the Dean that the student be suspended from the university.
 - i. If the Dean accepts the recommendation of the Chair, he/she will refer the recommendation to the Director of Student Judicial Affairs for final determination.
 - ii. The Director of Student Judicial Affairs will make the decision regarding university suspension after consulta-

tion with the Provost and Vice Chancellor.

- iii. The department Chair shall also inform the student in writing that a disciplinary suspension is recommended as the appropriate sanction for the student's violation of this code.
- f. If the student elects to challenge the recommended suspension, the student may request an informal hearing on the proposed sanctions before the Dean.
 - i. The student must submit a request in writing for an informal hearing on the proposed sanctions within 5 days of receipt of the chair's recommendation if personally served on the student or 7 days from the date of the decision if it was mailed to the student at the last known address.
 - ii. In such cases the Dean or his/her designee shall meet with the student, the chair, and/or instructor and apprise the student of the sanctions.

3. Notification

The department Chair shall send written verification of the sanctions to the student. Such notification will normally be sent within 5 days of the meeting with the instructor and the student.

4. Appeal

The student may appeal the severity of the sanction or failure to follow prescribed procedure, pursuant to Section VIII. A student may not appeal the question of responsibility.

C. Formal Disciplinary Procedures

1. Initiation of a Complaint

Any member of the University community may initiate disciplinary proceedings by filing a complaint within 90 days of discovery of an alleged violation of the Student Conduct Code.

- a. The complaint must be made in writing with all available evidence attached.
- b. The complaint shall be filed with the department Chair of the unit in which the violation is alleged to have occurred.
- c. The complaint may include a recommendation concerning the appropriate sanctions to be imposed if, following formal adjudication, the student is found in violation of the standards outlined in the Student Conduct Code.
- d. In any case initiated by an instructor, the complaint shall state whether or not the instructor will assign a failing grade for the work and/or course if, following formal adjudication, the student is found in violation

of this code in the manner alleged in the complaint. In any such case, the instructor shall assign an "Incomplete" in lieu of a letter grade pending adjudication and final resolution of the complaint.

2. Formal Charges

The department Chair shall review the complaint and, generally within 10 days, determine whether there are grounds to support that a violation may have occurred.

- a. If the chair finds sufficient grounds to believe a violation may have occurred, within 5 days of such determination the Chair shall notify the student in writing of the violation with which the student is charged. A copy of the charges shall be submitted to the appropriate academic Dean.
- b. If the chair finds no grounds for disciplinary charges, the complainant shall be notified. If the complainant wishes to proceed with a disciplinary charge, a written request must be submitted to the appropriate academic Dean within 5 days. The Dean shall review the request, the complaint, and the department Chair decision and decide whether to allow the complainant to pursue formal charges of the alleged violation set forth in the complaint.

3. Formal Resolution

In cases of alleged academic dishonesty where responsibility is disputed by the student, the case will be adjudicated at the Dean's level with a formal hearing. The Dean shall notify the student in writing regarding the date, time, and place of the hearing. The notification will be considered to have been delivered if the notice is sent to the current local address of the student as provided to Records and Registration by the student. Thus, failure to notify the university of changes of address could result in a hearing being held in the student's absence.

- a. The student has the right to
 - 1) be apprised of all evidence and view any and all supporting documents on the alleged violation;
 - 2) decline to offer evidence which may be self-incriminating;
 - 3) advisory assistance, at the expense of the student. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal or witness in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing except by permission of the

hearing agent and then only when the hearing agent finds special circumstances such as a party's inability or difficulty communicating;

- 4) an open or closed hearing;
 - 5) hear and question available witnesses;
 - 6) have witnesses testify in his/her behalf. While sworn statements will be accepted from those persons unable to attend the hearing, they may not constitute the sole form of evidence offered. The student must provide, in addition to such sworn statements, substantial corroborating evidence, either in the form of testimony by live witness or in the form of circumstantial evidence. Character witnesses may be excluded by the hearing agent.
 - 7) receive a written decision specifying judicial actions; and
 - 8) appeal the decision, pursuant to Section VIII.
- b. Hearing Agent: The charged student may submit a preference for a hearing before a Student Conduct Board or the Dean or his/her designee. The Dean shall decide the hearing agent.
- ## 4. Academic Conduct Board
- a. An Academic Conduct Board shall be composed of 7 members. A quorum required to conduct a hearing shall be 5 members. A decision shall be reached by majority vote.
 - b. Membership
 - 1) Student members shall meet the following standards:
 - a) Be full-time as defined by the Director of Records and Registration;
 - b) Be in good disciplinary standing since matriculation;
 - c) Have a minimum grade point average of 2.5 (undergraduate) or 3.0 (graduate), or be in good standing (professional student).

Full-time university employees who are enrolled in classes may not serve as student members. Graduate assistants and student workers in the department in which the incident occurred shall be excluded from the Academic Conduct Board.
 - 2) Faculty members may be any person with a faculty appointment, excluding administrators.
 - 3) All appointments shall be reviewed by Student Judicial Affairs to ensure that

candidates meet the minimum requirements. A list of Academic Conduct Board members may be obtained from the Dean.

c. Administrative Advisors

Each Academic Conduct Board shall have an administrative advisor from Student Judicial Affairs. The advisor's role shall be limited to providing guidance and clarification. The advisor shall sit with the panel in both open and executive sessions.

d. Terms

Each Academic Conduct Board shall be in session for twelve weeks during the fall and spring terms and for four weeks during the summer term. A board is not expected to meet during the first two nor the last two weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer designated by the Dean when a board is not in session or is defunct.

e. Powers

An Academic Conduct Board shall make a decision of Responsible or Not Responsible and shall recommend appropriate sanctions to the Dean.

5. Academic Conduct Hearings

a. Time Limitations

1) A student electing formal student conduct hearing shall be notified of the hearing date, which will occur no sooner than 5 days after receiving notice of a scheduled hearing or 7 days from the date of a mailed written notice.

2) A student shall have 7 days after receiving notification of the decision in which to submit an appeal.

b. Failure to Appear

Hearings shall be held in the student's absence if the charged student fails to appear. An appeal shall be dismissed if the student fails to appear unless extenuating circumstances exist which requires documentation.

c. Recordings

All formal hearings shall be recorded. After the appeal period has expired, the recording may be erased. Copies of hearing recordings will be made available to the charged student upon his/her request and at his/her expense.

d. Challenge for Cause

A student may challenge Academic Conduct Board members for cause. The decision to remove an Academic Conduct

Board member will be made by majority vote of the other members.

e. Confidentiality

All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in removal of board members by the Dean.

6. Sanctions

A student's disciplinary history shall have no bearing on the question of finding them Responsible or Not Responsible. If, however, a student is found to be Responsible of violating the standards outlined in the Student Conduct Code, the full disciplinary history shall be considered in determining the sanction. The academic Dean shall request the student's disciplinary record from Student Judicial Affairs. The academic Dean and the Director of Student Judicial Affairs shall develop lines of communication to keep each other apprised of a student's disciplinary history, for this purpose. Sanctions which may be imposed are as follows:

- a. The student may be assigned a failing grade for the work and/or course.
- b. The student may be placed on disciplinary probation.
- c. The student may be suspended from the class for the remainder of the semester.
- d. The student may be suspended from the college.
- e. The Dean may recommend to the Director of Student Judicial Affairs that the student be suspended from the university. The Director of Student Judicial Affairs will make the decision regarding university suspension after consultation with the Provost and Vice Chancellor.
- f. The student may be expelled from the college.
- g. The Dean may recommend to the Director of Student Judicial Affairs that the student be expelled from the university. The Director of Student Judicial Affairs will make the decision regarding university expulsion after consultation with the Provost and Vice Chancellor.
- h. The student may be issued an educational condition of sanction.
- i. Any combination of the above.

The Dean and Vice Chancellor and Provost must communicate the finding and sanction(s) imposed to the Director of Student Judicial Affairs.

7. Notification

The Dean shall send written notification of the results of the hearing and the sanctions to be imposed to the student. Such notification will normally be sent within 5 days of receipt of the Academic Conduct Board's recommendation or within 5 days of the administrative hearing.

8. Appeals

Any disciplinary determination or sanction relating to academic dishonesty may be appealed as outlined in Section VIII.

9. Implementation of Sanction

a. Sanctions shall be implemented when the student has waived or exhausted the right of appeal, or the appeal period has expired.

b. If an appeal is filed, any sanction(s) shall take effect as soon as the Vice Chancellor has issued his/her decision. On sanctions less severe than suspension from the university, the appropriate Vice Chancellor's decision is the final decision at the campus level.

c. The sanction shall be specified by the final hearing agent. However, when the sanction relates to the assignment of a grade, the instructor has the responsibility for assigning the grade. In a case where an "Incomplete" was assigned for a course, pending adjudication of charges of academic dishonesty against the student, the instructor shall immediately change the "Incomplete" to an appropriate letter grade.

d. A student separated from the university for disciplinary reasons is subject to the normal guidelines for tuition and fee refunds, grades, and financial penalties for terminating a housing contract.

e. Following the implementation of the sanction, all records relating to the case will be filed with Student Judicial Affairs.

10. Time Extensions

Either the student or the university may request an extension of time for the preparation of an appeal, the date of a conduct hearing, or for the preparation of any sanction or condition. These extensions must be made in writing prior to the original due date. For academic dishonest cases, this extension must be turned in to the Dean of the appropriate college, or his/her designee. The Dean of his/her designee has the final determination regarding approval of the extension.

V. PROCEDURES APPLICABLE TO SOCIAL MISCONDUCT**A. Jurisdiction**

A case may be resolved informally by a university official in a department as authorized by the Director of Student Judicial Affairs or his/her designee, pursuant to V.B.1. All cases in which responsibility is disputed shall be referred to Student Judicial Affairs. The Director of Student Judicial Affairs has initial jurisdiction over social misconduct not handled by informal resolution.

B. Informal Resolution**1. Informal Hearing**

In cases where the student accepts responsibility for the social misconduct, the matter may be adjudicated at the department level. An informal discussion between the university official and the student shall be held. If the student accepts responsibility for the social misconduct, the university official shall recommend a sanction to the Director of Student Judicial Affairs.

2. Sanctions

The full disciplinary history of the student shall be considered in determining the sanction. The university official may recommend to the Director of Student Judicial Affairs either a disciplinary reprimand or disciplinary censure. Conditions of sanctions may also be recommended.

3. Notification

The Director of Student Judicial Affairs shall send written verification of the sanction to the student within 5 days of the receipt of the recommendation.

4. Appeals

The student may not appeal the sanction imposed, if the sanction is either disciplinary reprimand or disciplinary censure. A student may not appeal the question of responsibility.

C. Formal Disciplinary Procedures**1. Hearing Agents****a. Administrative Hearing Officer**

The administrative hearing officer will be the Director of Student Judicial Affairs or his/her designee.

b. Student Conduct Board

1) The Student Conduct Board will adjudicate alleged violations of social misconduct under this code.

2) Size

The Student Conduct Board shall be composed of 7 student members. A quorum required to conduct a hearing shall be 5 members. A decision shall be reached by majority vote and forwarded

to appropriate staff with Student Judicial Affairs.

3) Membership

a) Student members shall meet the following standards:

- 1) Be full-time as defined by the Director of Records and Registration;
- 2) Be in good disciplinary standing since matriculation;
- 3) Have a minimum grade point average of 2.5 (undergraduate), 3.0 (graduate), or be in good standing (professional student).

Full-time university employees who are enrolled in classes may not serve as student members.

b) Members are selected via a application and interview process conducted by Student Judicial Affairs. All members must successfully complete a training program prior to participating in Student Conduct Board hearings. A list of Student Conduct Board members may be obtained from Student Judicial Affairs.

4) Student Conduct Board Operating Paper
The board may review and amend its own operating paper to ensure consistency with the provisions of this code. Any amendments to the operating paper are subject to the approval the Director of Student Judicial Affairs.

5) Administrative Advisors
The Student Conduct Board shall have an administrative advisor from Student Judicial Affairs. The advisor's role shall be limited to providing guidance and clarification. The advisor may sit with the board in both open and executive sessions only at the request of the chairperson of the board.

6) Terms

The Student Conduct Board shall be in session for 12 weeks during the fall and spring terms and for 4 weeks during the summer term. The board is not expected to meet during the first 2 nor the last 2 weeks of a term. Disciplinary cases shall be adjudicated by an administrative hearing officer when a board is not in session or is defunct.

7) Powers

The Student Conduct Board shall make a decision of Responsible or Not Responsible and shall recommend the sanction to the appropriate administrator.

2. Initiation of a Complaint

Any member of the university community or law enforcement agencies may initiate disciplinary proceedings by filing a complaint and/or documentation with Student Judicial Affairs within 90 days of the discovery of an alleged violation of the Student Conduct Code. Cases involved sexual harassment or sexual assault will be granted 180 days for the filing of a complaint and/or documentation being received by Student Judicial Affairs. The complaint must be in writing with all available evidence attached.

- a. The Director of Student Judicial Affairs, or designee, shall make a preliminary review of the complaint.
- b. If there are no grounds for disciplinary charges or if the complaint should be processed under another policy, the complainant shall be notified.
- c. If the complainant wishes to proceed with a disciplinary charge, a written request must be submitted to the Vice Chancellor for Student Affairs within 5 days of the receipt of the Coordinator's notification.
- d. The Vice Chancellor for Student Affairs shall review the request, the complaint, and the decision of the Director of the Student Judicial Affairs and decide whether to pursue formal charges.

3. Formal Charges

In cases of alleged social misconduct when responsibility is disputed by the student, the case will be adjudicated at the appropriate level with a formal hearing.

- a. The Director of Student Judicial Affairs, or designee, shall notify the student in writing regarding:
 1. The charges made against the student,
 2. Available information on which charges against the student and based,
 3. The relevant provisions of the Student Conduct Code,
 4. The witnesses, if any, who will be requested to testify, and
 5. The date, time, and place of hearing.
- b. The student may elect to acknowledge the violation and may or may not have a sanction imposed by the Director of Student Judicial Affairs. If this option is chosen, the student may appeal only the severity of the sanction.

If the student does not accept responsibility for the violation, the Director of Student Judicial Affairs may refer the matter to a formal hearing.

- c. The university will consider the notification delivered if the notice is sent to the current local address of the student provided to Records and Registration by the student. Failure to notify the university of changes of address could result in hearing being held in the student's absence.

4. Formal Adjudication

- a. The charged student has the right to
 - 1) Be apprised of all information and view any and all supporting documents on the alleged violation;
 - 2) decline to offer information which may be self-incriminating;
 - 3) Advisory assistance, at the expense of the student. The responsibility for selecting an advisor is placed on the charged student. The advisor may be any individual except a principal or witness in the hearing. The advisor shall be limited to advising the student and shall not participate directly in the hearing except by permission of the hearing agent and then only when the hearing agent finds special circumstances such as a party's inability or difficulty communicating;
 - 4) An open or closed hearing;
 - 5) Hear and question available witnesses;
 - 6) Have witnesses testify in his/her behalf. While signed statements will be accepted from those persons unable to attend the hearing, they may not constitute the sole form of evidence offered. The student must provide, in addition to such sworn statements, substantial corroborating evidence, either in the form of testimony by live witness or in the form of circumstantial evidence. Witnesses may be excluded at the discretion of the hearing agent.
 - 7) Receive a written decision specifying judicial actions;
 - 8) Appeal the decision, pursuant to Section VIII.
- b. Hearing Agent

The charged student may submit a preference for a hearing before a Student Conduct Board or the Director of Student Judicial Affairs or designee. The Director will decide the hearing agent. Factors to be considered by the Director include but are not limited to

privacy and reasonable availability of a Student Conduct Board.

5. Student Conduct Hearings

- a. Time limitations
 - 1) A student electing formal adjudication shall be notified of the hearing date. The hearing will occur no sooner than 7 days from the date of a mailed written notice.
 - 2) A student shall have 7 days after notification of the decision in which to submit an appeal.
- b. Failure to Appear

Initial jurisdiction hearing shall be held in the student's absence if the charged student fails to appear. An appeal shall be dismissed if the student fails to appear.
- c. Recorded Proceedings

All hearings shall be recorded. After the appeal period has expired, the recording may be erased. Copies of hearing recordings will be made available to the charged student upon his/her request and at his/her expense.
- d. Challenge for Cause

A student may challenge conduct board members for cause. The decision to remove a conduct board member will be made by the Director of Student Judicial Affairs or designee.
- e. Confidentiality

All evidence, facts, comments, and discussion at a closed hearing and all executive sessions shall be held in strict confidence. Failure to maintain confidentiality may result in administrative removal of the conduct board members by the Director of Student Judicial Affairs.
- 6. Sanctions

A student's disciplinary history shall have no bearing on the question of Responsible or Not Responsible. If, however, a student is found to be responsible for violating the standards outlined in this code, full disciplinary history shall be considered in determining the sanction. Sanctions which may be imposed are:

 - a. Disciplinary reprimand
 - b. Disciplinary censure
 - c. Disciplinary probation
 - d. Disciplinary suspension
 - e. Expulsion
- 7. Notification

The Director of Student Judicial Affairs shall send written notification of the results of the hearing and the sanctions to be imposed, if any, to the student. Such notification will normally be sent within 5 days of receipt of the Student Conduct Board's

recommendation or within 5 days of the administrative hearing.

8. Appeals

Any disciplinary determination or sanction involving social misconduct may be appealed as set forth in Section VIII.

9. Implementation of Sanction

a. The disciplinary sanctions shall be implemented when the student has waived the right of appeal or the appeal period has expired.

b. If an appeal is filed, sanction(s) shall take effect as soon as the Vice Chancellor has issued his/her decision. On sanctions less severe than suspension from the university, the appropriate Vice Chancellor's decision is the final decision at the campus level.

c. The sanction shall be as specified by the final adjudicating agent.

d. A student separated from the university for disciplinary reasons is subject to the normal guidelines for the tuition and fee refunds, grades, and financial penalties for terminating a housing contract.

e. Any type of disciplinary separation from the university may be accompanied by a condition which bars the student from university property.

10. Time Extensions

Either the student or the university may request an extension of time for the preparation of an appeal, the date of a conduct hearing, or for the preparation of any sanction or condition. These extensions must be made in writing prior to the original due date. For academic dishonest cases, this extension must be turned in to the Dean of the appropriate college, or his/her designee. The Dean of his/her designee has the final determination regarding approval of the extension.

VI. SANCTIONS

The following are sanctions which may be imposed for a violation of the standards outlined in Section II of the Student Conduct Code. Conditions (Section VII) may accompany a sanction.

A. Failure of an assignment, quiz, test, examination or paper:

A failing grade (F) may be assigned for the work in connection with which the violation occurred.

B. Failure in a course:

A failing grade (F) may be assigned for the course in which the violation occurred.

C. Revocation of a Degree:

An academic degree previously awarded by the university may be revoked on proof that it was obtained by

fraud or that a significant part of the work submitted in fulfillment and indispensable to the requirements of such a degree was obtained via academic dishonesty.

D. Disciplinary Reprimand:

In cases of minor violations and when the violation is acknowledged by the student, a written reprimand may be issued by the Director of Student Judicial Affairs or designee. The purpose of the reprimand shall be to call to the student's attention the responsibility of meeting certain minimal community standards. Since a reprimand is given only when the violation is acknowledged, the sanction may not be appealed.

E. Disciplinary Censure:

Disciplinary censure is a written warning to the student that the cited behavior is not acceptable in the campus community and that further misconduct may result in more severe disciplinary action. The student may appeal the finding of a violation but may not appeal the severity of the sanction.

F. Disciplinary Probation:

Disciplinary probation removes a student from good disciplinary standing. The probation shall last for a stated period of time and until conditions imposed have been met. Any misconduct during or after the probationary period will bring further disciplinary action and may result in suspension. Probationary status prevents the student from representing the university in some extracurricular activities and may result in the loss of financial assistance.

G. Disciplinary Suspension: Disciplinary suspension is an involuntary separation of the student from the university for a stated period of time not to exceed three (3) years and until an imposed condition is met. A notation is entered on the student's transcript and will remain there for the duration of the suspension. When the suspension is concluded, the notation will be removed.

H. Expulsion: A permanent involuntary separation of the student from the university.

I. Additional Sanctions Associated with Suspension or Expulsion:

1. Students shall not be awarded degrees if, at the time of commencement, they are subject to disciplinary action or to charges under this code that could lead to suspension or expulsion.

2. A student separated from the university for disciplinary reasons is subject to the normal guidelines for the refund of tuition and fees, the issuance of grades, and the imposition of financial penalties for terminating a housing contract.

3. If the conduct which led to disciplinary separation constitutes an ongoing threat to the safety of the university, its employees, or its students, the sanction may be accompanied by a condition which

bars the disciplined student from university property.

The Vice Chancellor for Student Affairs, with the approval of the Chancellor, may establish a system of cost recovery measures to be assessed to students who are found in violation of the Student Conduct Code. The purpose of the cost recovery measures is to offset the costs specific to a sanction or a condition of a sanction. The cost recovery measures shall not be used as a sanction itself.

VII. CONDITIONS

Conditions may accompany any of the aforementioned sanctions. Conditions include, but are not limited to, restitution of damages, community service hours, required counseling or therapy based upon an evaluation, required academic performance, etc. A condition may include loss of certain university privileges. If a condition accompanies a sanction, the condition must be educational or reparative and related to the standard violated by the student.

VIII. APPEALS

An appeal is not a rehearing; rather, it is a procedural safeguard. In an appeal, the burden of proof is shifted from the university to the student charged with the violation of the Student Conduct Code. The following are procedures necessary for the student to follow to initiate an appeals process:

Appeal Requests

Request for appeal must be submitted in writing within 7 days after receiving notification of the decision of a formal adjudication. Appeals must be addressed in writing to the Vice Chancellor for Student Affairs in cases of social misconduct or the Provost in cases of academic misconduct. The appeal should be turned in to Student Judicial Affairs for implementation of the appeal process.

Timeliness

Failure to request an appeal in a timely manner constitutes a waiver of any right to appeal.

Basis for Appeal

The basis of an appeal will be limited to one or more of the following grounds:

1. There was a procedural error which substantially affected the outcome of the hearing;
2. There is no evidence in the record to support a finding of violation of this code;
3. There is new or newly discovered evidence which may substantially affect the outcome of the hearing; and/or
4. The sanction is excessively severe.

Advisory Review Board

A student may appeal the decision of the Vice Chancellor, only with regards to suspension or expulsion, to the Advisory Review Board. The appeal shall be in writing and must be submitted within seven (7) days of receipt of the Vice Chancellor's decision. The Advisory Review Board shall act as an advisory board to the Chancellor. The Advisory Re-

view Board may only review cases involving suspension or expulsion.

The Advisory Review Board shall consist of 8 voting members:

- 2 faculty members
- 2 staff members (1 Administrative/Professional and 1 Civil Service)
- 2 undergraduate students, and
- 2 graduate or professional students.

A non-voting representative from the Office of General Counsel shall sit on the board and act as the board's advisor. The members of the Advisory Review Board shall be appointed by the Chancellor. The members of the Advisory Review Board shall elect a faculty member to serve as chair of the board. In accordance with Board of Trustee policy, a student will not be eligible to graduate while an appeal is pending.

IX. INTERPRETATION AND REVISION

A. Interpretation

Any question of interpretation or application of the Student Conduct Code shall be referred to the Vice Chancellor or his or her designee for final determination.

B. Formal Review

The Student Conduct Code shall be reviewed in its entirety every five years. The Chancellor of Southern Illinois University Carbondale shall appoint a committee consisting of:

- i. 2 undergraduate students,
- ii. 1 graduate or professional student,
- iii. 2 faculty members,
- iv. 1 academic Dean,
- v. 1 representative from University Housing,
- vi. 1 representative from Student Judicial Affairs, and
- vii. 1 representative from the office of the General Counsel.

The student and faculty members shall be recommended by their respective constituencies. The Vice Chancellor for Student Affairs shall appoint a chair for the committee, who may be one of the members listed above.

C. Additional or Emergency Reviews

At any time prior to the next five-year review of the Student Conduct Code, a recognized constituency, the Provost and Vice Chancellor, or the Vice Chancellor for Student Affairs may request a review of portions of the Student Conduct Code. The request must stipulate in writing the specific portion(s) of the Student Conduct Code to be reviewed and sound reason(s) for the request. The Chancellor shall then authorize the review unless he or she states in writing sound reason(s) for denial.

D. Amendments

All Student Conduct Code review committees shall make recommendations to the Chancellor. The Chancellor may propose amendments of this code to the President of Southern Illinois University. Due consideration shall be given to the recommendations of the committee provided for in IX.B.

E. Notification

Following approval of any amendments by the President, the Chancellor's office shall give notice in the *Daily Egyptian* that the Student Conduct Code has been revised and is available in its entirety on the Student Affairs website (www.siu.edu/staffair/). Paper copies of the Student Conduct Code shall also be available at the office of Student Judicial Affairs, the office of the Vice Chancellor for Student Affairs, and all University Housing area offices. Any amendment of the Student Conduct Code shall become effective after such notice has been given to the campus community.

Academic Grievances Policy/Procedures

Graduate Student Academic Grievance Policy

Graduate students at SIUC shall have the right to appeal for redress of grievance through established channels under the conditions stated below. Access to these channels is restricted to complaints by graduate students alleging that some member of the university community has caused the student to suffer some specific harm related to a matter within the authority of the dean of the Graduate School. Grievances which have been brought to a hearing under another campus grievance procedure shall not be brought to a hearing under this procedure.¹

With respect to students' complaints alleging capricious grading, the following guidelines shall apply: Instructors are expected to evaluate student work according to sound academic standards. Equal demands should be required of all students in a class, and grades should be assigned without departing substantially from announced procedures. It is the instructor's prerogative to assign grades in accordance with his/her academic/professional judgment, and the student assumes the burden of proof in the appeals process. Grounds for appeals include: (1) the application of non-academic criteria in the grading process, as listed in the University's non-discrimination and affirmative action statements: race, color, sex, national origin, religion, age, sexual orientation, marital status, or handicap; (2) the assignment of a course grade by criteria not directly reflective of performance relative to course requirements; (3) the assignment of a course grade by standards different from those which were applied by the instructor to other students in the course.

GRADUATE STUDENT ACADEMIC GRIEVANCE PROCEDURE

A graduate student seeking redress through grievance must first attempt to resolve the matter informally by contacting the party against whom redress is sought (respondent). If the dispute is not resolved at this stage, the student should contact the respondent's departmental chair or another appropriate mediator, such as the university ombudsman, who will attempt to resolve the dispute.

In the event that the dispute is not resolved informally, a graduate student may ask for and receive a hearing before a departmental academic grievance committee. [Such a grievance will be governed by the procedures established by the academic unit in which the complaint arose. In the event an academic unit has not established such

procedures, the procedures outlined below shall govern the grievance.]

Departmental Grievance Procedure

FILING A GRIEVANCE

A graduate student desiring a hearing before a grievance committee of an academic department must submit a written request to the chair of the department no later than 30 calendar days² after the beginning of the semester following the incident in question, excluding summer term. A student may request an extension of the deadline in writing by petitioning the department chair. In the event that informal proceedings are continuing toward resolution, such a request shall normally be granted.

The request for a hearing must state the following:

1. Name of the grievant.
2. Program in which the grievant is enrolled.
3. Name of the grievant's major adviser.
4. Name and title of the person(s) against whom the grievance is being filed.
5. Current address and phone number of the grievant.
6. Statement of the grievance including descriptions of the incident(s) involved, date(s) of occurrence, what remedy is being sought, as well as any supporting documents.

DEPARTMENT ACTION ON GRIEVANCE

Upon receiving a written request for a hearing regarding an academic grievance, the department chair shall send the respondent a copy of the grievance, who will provide the chair with a written response within a reasonable time as stipulated by the chair. The chair shall then forward the grievance and response to the department graduate student grievance committee.³

The department chair shall notify the parties of the identity of the individuals who have been selected to serve on the grievance committee. The participation of any committee member may be challenged for cause. If the department chair determines that the challenge is valid, she/he shall name a substitute.

The committee chair shall request of both parties copies of any documents and a list of witnesses they wish to

¹Cases involving academic dishonesty will be handled according to the Student Conduct Code. Separate grievance procedures exist for cases covered by the University Policy on Sexual Harassment, the Policy Accommodating Religious Observances of Students, the Policy on the Release of Student Information and Access to Student Records at Southern Illinois University, the Policy on Immunization of Enrolled Students, the Policy on the Determination of Residency Status, and the University's response to comply with Americans with Disabilities Act. These procedures are published in the Undergraduate Catalog. Graduate students employed as student workers are covered by a student worker grievance procedure, which is administered by the Financial Aid office.

²Hereafter, "day" refers to calendar day, unless defined otherwise.

³Department Graduate Student Grievance Committee: A department graduate student grievance committee will be advisory to the department chair and will submit its findings to the department chair. The committee shall consist of three members. The department chair may designate an existing department committee to serve in such a capacity (subject to the qualifications listed herein), or may appoint an ad-hoc graduate student grievance committee. The members of the committee shall be appointed wherever possible from the department/unit in the college in which the grievance arose. Of those three members, two shall be appointed from the senior graduate faculty and one shall be appointed from the graduate student body upon consultation with the leadership of the department graduate student organization. A department graduate student grievance committee shall meet and elect its chair from among its graduate faculty membership. Any faculty member involved in the dispute shall not be appointed to the grievance committee.

introduce. These should be submitted without delay. The committee chair shall convene a hearing within 20 days of receipt of the substantiating documents. These documents shall be available to both parties at least five days prior to the hearing.

The hearing shall be conducted by the committee according to the hearing procedures which are outlined in the Appendix.

In the absence of compelling circumstance, the committee shall make its recommendation on the grievance to the department chair within 10 working days after the conclusion of the hearing.

The department chair shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the committee members, and the collegiate dean at the same time.

The department chair shall advise the parties of their right to appeal to the dean of the Graduate School. Hearings of appeals will not be automatically granted. Dissatisfaction with the decision shall not be sufficient grounds for appeal. The appellant must demonstrate that the decision at the department level was in error.

Appeals of Department Decisions to the Graduate School

FILING AN APPEAL

If a graduate student wishes to appeal a decision of the department she/he must file a written appeal with the dean of the Graduate School within 30 calendar days of receipt of the department decision. The appeal must state the following:

1. Name of the appellant.
2. Program in which the appellant is enrolled.
3. Name of the appellant's major adviser.
4. Name and title of the person(s) against whom the original grievance was filed.
5. Current address and phone number of the appellant.
6. Copies of the original statement of grievance, the response by the person against whom it was filed, supporting documents, as well as a statement of what remedy is being sought.
7. Summary of grievance proceedings held at the department level and the decision(s) rendered at that time.
8. Statement of why the previous decision may be in error.

The dean will promptly forward the material to the coordinator of the Student Appeals Committee of the Graduate School (SAC)⁴. The SAC coordinator will solicit a reply to the appeal from the respondent. The coordinator will then promptly forward all materials to the committee members and will convene the committee at the earliest

opportunity. The committee will decide by simple majority whether or not a hearing should be held. If a hearing is not granted, the coordinator shall forward all materials to the dean of the Graduate School and inform both parties of the reasons for the denial. If a hearing is granted the SAC coordinator shall request from the Graduate Council a list of graduate faculty members and from the Graduate and Professional Student Council a list of graduate students available to serve as hearing panel members. These persons may not be members of the same college as the parties to the grievance. The coordinator shall appoint a panel of three graduate faculty members and two graduate students and so notify the parties to the grievance. Panel members may be challenged for cause and, if the coordinator determines the challenge to be valid, she/he will name substitute(s) from the lists. The panel selects its own chair.

Procedures of the Student Grievance Committee of the Graduate School

Upon formation of the hearing panel, the SAC coordinator shall forward all materials to the hearing panel chair. The chair shall convene a hearing within 30 days.

The hearing shall be conducted by the hearing panel according to the procedures listed in the Appendix, with the exception that new evidence and testimony may be introduced only at the discretion of the panel. The hearing at this level will be limited to the bases of the appeal itself. New evidence will not normally be permissible.

The committee shall make its recommendation on the appeal to the dean within 10 working days after the conclusion of the hearing. The dean of the Graduate School shall decide to accept or reject the committee's recommendations and render a decision on the grievance promptly. The decision and the reasons for it shall be submitted to the parties, the hearing panel members, and the department chair.

All records of the appeal and hearing shall be deposited with the Graduate School upon completion of the hearing panel's work.

Appendix A

HEARING PROCEDURES

1. The principal parties to the grievance shall have the right to be accompanied by an adviser of their choice. The advisers may speak on behalf of their clients only with the approval of the committee.
2. All hearings shall be open unless either of the parties requests that the hearings be closed. If the hearing is closed, only the parties, their adviser, and the committee shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony if the hearing is closed.
3. All hearings shall be tape recorded. The tape recording will be deposited in the office of the department chair at the conclusion of the hearing.

⁴Student Appeals Committee of the Graduate School: The Vice-Chair of the Graduate Council shall be the Coordinator of the SAC who will select three members of the Graduate Council (two faculty members, one student) to form a SAC as needed.

4. Each party may call witnesses to present evidence. Each party shall have the right to examine any witness called by the opposing party. If a witness is unable to appear the committee may allow written statements. If the presence of a witness is required to ensure fairness to all parties, the hearing may be continued until such witness is physically able to attend the hearing.
5. The committee will decide all matters, procedural and substantive, by simple majority vote.
6. Each party may make an opening and a closing statement.
7. Decisions by the panel will be based on a preponderance of the evidence.

Graduate School Procedures for Charges of Academic Dishonesty Leading to Possible Rescission of Degree

INTRODUCTION

Charges against a former student relating to acts of academic dishonesty in the submission of graduate degree requirements shall be handled to the extent feasible under the SIUC Student Conduct Code procedures applicable to charges relating to academic dishonesty. The dean of the Graduate School has the responsibility for the formal resolution of charges involving academic dishonesty in Graduate School programs. Since the Student Conduct Code procedures are not in all respects applicable to charges involving an individual no longer enrolled in the University, the following supplemental procedures will be followed for adjudicating such charges.

NOTIFICATION OF CHARGES

Charges against a former student involving allegations of academic dishonesty in the completion of graduate degree requirements shall be initiated by the dean of the Graduate School by letter to the individual, sent certified mail/return receipt requested, stating the specific charges, and the date, time, and place for the hearing, and enclosing a copy of the Student Conduct Code and these procedures. The charge letter shall be mailed no less than 20 business days in advance of the date of the hearing.

HEARING AGENT

Charges shall be heard by a five-member hearing committee, the members of which shall be appointed from those colleges/schools having graduate programs. Of the five members, three shall be appointed from the graduate faculty and two shall be appointed from the graduate student body. The dean will seek nominations for a committee hearing a case from the Graduate and Professional Student Council for the graduate student members, and from the Graduate Council for the graduate faculty members. The committee will be demographically representative of the University insofar as possible. The academic unit from which the charge arose will not have a member appointed to the hearing committee. Once a hearing committee is constituted it shall meet and elect its

own chair from among its graduate faculty membership. The individual charged shall have the right to challenge membership of the hearing committee as provided in the Student Conduct Code.

HEARING PROCEDURES

Hearings shall be conducted in accordance with the formal disciplinary procedures set forth in the Student Conduct Code. In addition, the following procedures shall govern the conduct of the hearing.

1. The individual charged shall have the right to be accompanied by an adviser of his/her choice. An adviser will be permitted to advise the individual in the hearing, and to speak on behalf of the individual and cross-examine witnesses with the consent of the hearing committee.
2. The dean of the Graduate School and the individual charged shall provide to the hearing committee a list of witnesses to be called and copies of any documents which they seek to introduce into evidence at the hearing. The committee chair will furnish copies of these to the other party. Such witness list and documents shall be provided to the hearing committee not less than 10 business days prior to the date scheduled for the hearing, and to the parties not less than 5 business days before the date of the scheduled hearing.
3. All hearings shall be closed unless the individual charged requests that it be open. If the hearing is closed, only the parties, their adviser, and the committee members shall be present during the taking of evidence. Witnesses for either party shall be present only while giving testimony.
4. All hearings shall be tape-recorded. The tape-recording will be submitted along with the entire case record and the committee's findings and recommendations to the dean of the Graduate School following conclusion of the hearing.
5. Each party may make an opening statement before the presentation of any evidence and a closing argument following the conclusion of all evidence.
6. The charges against the individual and witnesses testifying in support thereof shall be presented first. The individual charged shall have the right to respond to the charges and present witnesses and evidence in his/her own behalf.
7. Each party shall have the right to ask questions of any witness called by the other party. Members of the committee may also question witnesses.
8. Written statements in lieu of personal testimony may be used only with permission of the committee and only in the event a witness is physically unable to attend the hearing. The opposing party shall be given notice at least three days prior to the commencement of the hearing of the fact that an individual will not be physically present to give testimony and so that objection may be made to the

use of written statements. If the committee determines that the actual presence of the witness is required to insure fairness to all parties, the hearing may be continued until such witness is physically able to attend the hearing.

9. The hearing committee will decide all matters, procedural and substantive, by simple majority vote.
10. In the absence of compelling circumstances, the committee shall make findings and recommendations on the charges to the dean of the Graduate School within 15 business days after the conclusion of the hearing. The dean of the Graduate School shall render a decision, absent compelling circumstances, within ten business days after receipt of the committee's findings and recommendations. The decision and the reasons therefore shall be submitted to the individual charged by certified mail, return receipt requested, and to the committee chair. If the dean determines that additional evidence is necessary to decide the matter(s), the dean may remand the matter to the committee for the taking of further evidence, and in doing so, may limit the issues on which additional evidence may be taken. When a matter is remanded to the committee, the committee shall follow the procedures set forth above.

SANCTIONS

Sanctions which may be imposed include the completion of any additional academic requirements deemed necessary for continued holding of the degree, or, if it is found that the degree was improperly awarded because of academic dishonesty on the part of the former student in the submission of degree requirements, a recommendation that the degree be rescinded. A recommendation that a degree be rescinded will be made to the chancellor through the vice chancellor for Academic Affairs and Provost, and will require final action by the Board of Trustees of Southern Illinois University.

APPEAL

If the individual is not satisfied with the decision of the dean, a written argument stating the reasons for such dissatisfaction may be submitted to the vice president for Academic Affairs and provost within ten business days after the date that delivery of the decision was tendered by the U.S. Postal Service to the individual. Such written argument shall be attached to the dean's decision and remain therewith throughout the remainder of the process.

Southern Illinois University Board of Trustees Policy on Sexual Harassment

(The following policy was approved by the SIU Board of Trustees on May 7, 2009.)

1. Sexual Harassment Policy Statement

Southern Illinois University is committed to a policy of providing equal employment and educational opportunities. In particular, Southern Illinois University is committed to maintaining a community in which students, faculty, and staff can work and learn together in an atmosphere free of all forms of discrimination, including sexual harassment. Sexual harassment violates the dignity of the individual and the integrity of the University as an institution of higher learning, and thus, sexual harassment in any form will not be tolerated at Southern Illinois University. This policy applies to all employees, students, contractors, and visitors of Southern Illinois University.

This policy prohibits sexual harassment, retaliation related to sexual harassment claims, knowingly reporting false sexual harassment complaints and knowingly providing false information during the investigation of a sexual harassment complaint. All University employees are responsible for taking reasonable and necessary action to prevent sexual harassment, and all members of the University community are expected to contribute to an environment free of sexual harassment, and are encouraged to report promptly (pursuant to campus procedures) any conduct that could be in violation of this policy. Each SIU campus shall adopt specific procedures for reporting, investigating and resolving harassment claims.

This policy shall not abridge any individual's speech and due process rights under the First and Fourteenth Amendments; nor shall it abridge principles or rights of academic freedom or the University's educational mission. Prohibited sexual harassment and discrimination are not expression protected as a matter of academic freedom.

2. Definition of Sexual Harassment

Sexual Harassment in Employment means any unwelcome sexual advances, requests for sexual favors, or any conduct of a sexual nature, when:

- a. Submissions to or toleration of such conduct is made, either explicitly or implicitly, a term or condition of an individual's employment (this is a type of *quid pro quo* – meaning “this for that” – sexual harassment); or
- b. Submission to or rejection of such conduct by an individual is used as a basis (or threatened

to be used as a basis) for employment decisions or assessments affecting such individual (this is a type of *quid pro quo* – meaning “this for that” – sexual harassment); or

- c. Such conduct has the purpose or effect of substantially interfere with an individual's work performance or creating an intimidating, hostile, or offensive working environment (this is a type of hostile environment sexual harassment).

Sexual Harassment in Higher Education means any unwelcome sexual advances, requests for sexual favors, or any conduct of a sexual nature, when:

- a. Submissions to or toleration of such conduct is made, either explicitly or implicitly, a term or condition affecting the student's participation in or benefit from any of the academic educational, extra-curricular, athletic, or other programs of the University (this is a type of *quid pro quo* – meaning “this for that” – sexual harassment); or
- b. Such conduct has the purpose or effect of substantially interfering with a student's academic performance or creating an intimidating, hostile, or offensive academic environment (this is a type of hostile environment sexual harassment).

Hostile environment sexual harassment occurs when unwelcome conduct of a sexual nature is so severe, persistent, or pervasive that it affects an employee's work performance, limits a student's ability to participate in or benefit from a University program or activity, or creates an intimidating, threatening or abusive working or academic environment. Sexual harassment generally includes something beyond the mere expression or display of views, words, symbols, images, or thoughts that some persons find offensive.

Totality of the Circumstances: In determining whether alleged conduct constitutes sexual harassment, the record as a whole and the totality of the circumstances will be considered. Circumstances may include the frequency of the conduct; its severity; whether it was physically threatening or humiliating, or a mere offensive utterance; and whether it unreasonably interfered with the alleged victim's work performance or ability to participate in or benefit from the University's programs. The objective severity of the conduct will be judged from the perspective of a reasonable person in the position of the alleged victim

and not on the intent of the person engaging in the conduct.

Examples of behavior that may be considered sexual harassment include, but are not limited to:

- a. Physical sexual assault or coerced sexual intercourse;
- b. Unwelcome physical contact, such as touching of a person's body, hair or clothing, or hugging, patting or pinching;
- c. Direct or implied threats that submission to sexual advances will or could be a condition of employment, work status, promotion, performance evaluation, grades, letters of recommendation, or other work or educational benefits (*quid pro quo*);
- d. Severe or persistent unwelcome verbal, physical or other expressive conduct that is offensive or humiliating in a sexual way. Such conduct may include comments of a sexual nature and/or sexually explicit statements, questions, jokes, anecdotes, gestures, or facial expressions that would offend or humiliate a reasonable person in the circumstances of the individual experiencing this conduct. Conduct need not be in person but can be any form of communication including but not limited to written, telephone, or electronic communication such as electronic mail and/or comments sent via the internet.
- e. Exhibition or use of sexually explicit materials in the workplace or learning environment that have no relationship to the curriculum or research or the mission of the University and substantially interfere with an employee's work performance or a student's ability to benefit from University programs. Such materials may be in the form of music, documents, objects, photographs, film or electronically generated materials.
- f. Any unwanted, inappropriate behavior that is targeted to a person or person(s) because of their gender or sexual orientation, for example repeatedly telling women (or men) that they are not capable of doing a certain kind of work.
- g. Amorous or sexual relationships between a faculty member and a student under his or her academic supervision or between a supervisor and an employee under his or her supervision, where the direct power differential compromises the subordinate's free choice. (Even consenting relationships may lead to an actual or perceived conflict of interest or other unethical conduct. See policies on consenting relationships.)

Retaliation is defined as any act of reprisal, including negative or otherwise unwarranted treatment, related to the reporting of, or participation in a complaint of sexual harassment. Retaliation may include, but is not limited to:

- a. Taking negative tangible employment actions against a person;
- b. Taking actions that substantially interfere with or have a chilling effect on the employee's or student's ability to participate fully in and benefit from the work or educational environment;
- c. Failing to provide assistance or instruction that would otherwise be provided;
- d. Failing to fairly and/or objectively evaluate an employee's or student's performance;
- e. Failing to record an appropriately earned grade for a student; or
- f. Otherwise sabotaging an employee's or student's performance or evaluation.

It is a violation of this policy to engage in any retaliatory acts against an employee or student who reports an alleged incident of sexual harassment, or any employee or student who testifies, assists, or participates in a proceeding, investigation, or hearing relating to an allegation or complaint of sexual harassment.

3. Duty to File in Good Faith/False Reports

Any person who reports alleged sexual harassment or provides information during the investigation of a complaint is presumed to have participated in the investigatory process in good faith. It is a violation of this policy for persons to knowingly make a false sexual harassment complaint or knowingly provide false information during the investigation of a complaint.

4. Implementing Procedures

This Sexual Harassment Policy is to be implemented throughout the University, and procedures consistent with this policy for such implementation are to be established on each campus. The President is authorized to delegate to each Chancellor, the authority to develop procedures for the implementation of this Sexual Harassment Policy.

Attribution

Sexual harassment policies are governed by state and federal laws and statutes. As such, policies at many institutions can look very similar to that proposed by SIUC. This policy was developed in accordance with the Illinois Human Rights Act (775 ILCS 5/2 and 775 ILCS 5/5 and 775 ILCS 5/5a), the Equal Employment Opportunity Commission Regulations (29 C.F.R. § 1604.11); and guidance issued by the United States Department of

Education Office of Civil Rights. Additionally, policies from several other universities were reviewed including: University of Massachusetts Amherst, University of Michigan, University of North Carolina at Chapel Hill, Michigan State University, University of North Carolina At Greensboro, University of Maine, Indiana University, Indiana University - Purdue University at Indianapolis,

Purdue University, University of Southern Indiana - Evansville, New York University, University of Illinois, University of Massachusetts - Boston, City University of New York, Northwestern University, Illinois State University, University of Colorado System, Youngstown State University, Princeton University, Michigan State University, and University of Florida - Gainesville.

Where to Get Information Regarding SIUC's Sexual Harassment Policy

COMPLAINT RESOLUTION OFFICER

Interim Associate Chancellor (Diversity)

AFFIRMATIVE ACTION OFFICE

Linda McCabe Smith, 453-1186, or Phyllis JL Khaaliq 536-6618

INFORMAL MEDIATION

Office of the University Ombudsman, 453-2411

INFORMATION ADVISERS

Counseling Center	Rosemary Simmons .453-5371
English	Lisa McClure453-6837
Human Resources	Jennifer Watson.....453-6661
International Students & Scholars	Carla Coppi453-5774
Office of Diversity & Equity	Linda McCabe Smith .453-1186
Psychology	David Dilalla... .453-3559
School of Law	Jill Adams453-8740
University Ombudsman	Lynn Connley.453-2411
University Women's Professional Advancement	Michelle Miller453-1366
Women's Services	Joan McDermott453-5141

WEB SITE

<http://affect.siuc.edu/sexharass.html>

In an emergency situation that involves possible criminal sexual misconduct or in the event of criminal sexual assault please notify Campus Police at 453-2381 or dial 911 (both lines are TTY/TDD accessible.)

Academic Resources

Library Affairs

Morris Library, named after the late Delyte W. Morris, University president from 1948 to 1970, features an Internet accessible information network providing entry to library catalogs, abstract and index services, full-text periodical databases, and local and national technological resources: <http://www.lib.siu.edu>. The Library contains over two and half million volumes, over 36,000 current periodicals and serials, and over three and a half million microforms. Collections of government documents, maps, films, and videotapes and sound recordings are notable as well. With the exception of materials in the Special Collections Research Center, the majority of items are arranged on open shelves and available for browsing.

The Library's public computers provide access to the online catalog and to more than 100 electronic databases, including indexing and abstracting services and the full text of over 2,000 journals and newspapers. Many of these resources can also be accessed from personal computers in residence halls, offices, and homes through the Library's homepage. SIUCat, the library's online catalog, provides access to our materials and 75 other academic libraries in Illinois. Additionally, users have access to over 100 additional libraries in the state for interlibrary loan purposes.

Completed in 2009, the 58+ million dollar renovation made significant improvements to the campus library. The Information (Reference) Desk is located on northwest side of the first floor. Here, patrons may seek assistance in researching materials, including books, journals, microfilm, and online databases. The Circulation Services Desk, located along the north-south corridor, is where all books are checked out. This desk also serves as the Interlibrary Loan location, assisting patrons with requesting and receiving materials from other institutions. Reserved course-related materials in various media are made available to all class participants for limited-time usage from the Circulation Services Desk.

Instructional Support Services, which provides instructional design and instructional technologies, as well as a multimedia development lab and digital imaging, is now located at the south entrance to Morris. The first floor of Morris also includes an *Delyte's*, a coffee café and adjoining commons, a public computer area housing 65 computers, two computer classrooms, an auditorium, and the offices of the University Honors Program.

The Special Collections Research Center houses the rare books and manuscript collections and maintains the University archives. It contains important research collections in American Philosophy, First Amendment Freedoms, American and British twentieth century literature and theatre, a Political Papers archive, and the history of

southern Illinois. The Special Collections Research Center, located on the first floor of the library, resides off the Hall of Presidents and Chancellors on the east side of the building.

The second floor of Morris Library houses the Administrative Offices, Information Resources Management, and Reference Faculty offices. An office of the University Writing Center and a computer classroom can also be found on the second floor.

The Government Information unit, a selective US Federal Depository Library and Illinois State Depository Library, is located on the third floor. The Government Information materials include over 1.5 million items, including United Nations documents. The Instructional Materials Center (IMC), which is also housed on the third floor, is a collection of preK-12 materials designed to provide students, teachers, and school administrators on campus and in Southern Illinois schools with sample teaching materials for using in the classroom or in preparing or evaluating a curricular materials. The Periodicals and Special Formats materials are also located on floor three. A Help Desk assists patrons with questions regarding Government Information, IMC, and Periodicals and Special Formats.

Geospatial Resources, which includes Geographic Information Services and the Map Library, are found on the fourth floor. The Map Library has more than a quarter-million maps and nearly 100,000 aerial photographs. Geographic Information Services can help locate a digital map or make one of your own.

The Library faculty and staff recognize the complexity involved in using a research library and are eager to help students, faculty, staff, and others in satisfying their research needs. Seminars, tutorials, printed handouts for electronic resources, Internet access, bibliographic instruction, library use, and information retrieval are provided without charge on a continuous basis by Library faculty and staff.

Information Technology

The Information Technology Department assists faculty, staff and students in the achievement of instruction, research, service and administrative goals and objectives of the University. SIU's campus area network provides network-based information resources as well as Internet2 connectivity to all main campus buildings. Campus wireless service and five Computer Learning Centers with computer classrooms and general access areas are also available to faculty, staff and students. SIU's network is connected through the Illinois Century Network (ICN). Additional

networks connect our Edwardsville and Springfield campuses.

Information Technology provides a wide range of technology services. They include campus telephone services; micrographics, administrative information systems, student information systems, the network infrastructure; electronic mail, network id services, computer, telephone, e-mail, instant messaging and walk-in support via the campus helpdesk; ethernet access in the student residence halls; campus wireless access; student printing services, site license software distribution, UNIX computational accounts, SMART projection systems in computer classrooms and checkout laptop services.

Students have access to a student-oriented information resource called "SalukiNet"

<https://salukinet.siu.edu/cp/home/displaylogin>. SalukiNet provides access for students to their personal records, such as grades, transcripts, financial aid, account information and student payroll.

Computer services are available on-line to the University academic, research and administrative communities 24 hours per day, 7 days a week.

Research and Service Centers

Center for Advanced Friction Studies

As a University-based center sponsored by the National Science Foundation, the State of Illinois and an industrial consortium, the Center for Advanced Friction Studies involves the education of undergraduate and graduate students in the science of friction materials and training through the research experience. Academic programs are structured to emphasize instruction in subject areas specific to friction materials. The Director of the center is a tenured professor and the center's associates are tenured or tenure-track members of academic departments. Central to the center's mission is completion of research programs at a level satisfying the dissertation and thesis requirements of SIUC, and the presentation and publication of the results at learned meetings and in the technical journals.

The center personnel are required to develop courses in their specialization suitable for undergraduate and graduate students and to offer these courses to industry and government as short courses and seminars. Technology transfer from the center to industry and industry to the center are facilitated by personnel exchange and by utilizing remote interactive learning networks. Industrial representatives are brought to campus to assist research on both core (non-proprietary) and non-core proprietary projects.

Unique to the center is the focus of the research on areas of fundamental interest to the friction industry in the United States. In order to ensure that the results have the potential for providing insights into critical problems, an industrial board recommends the initial programs of research, reviews the results, and suggests the development work to be carried out in the technology

transfer implementation programs. The governing industrial board is composed of one industry representative from each U.S. supporting company, as defined by the U.S. Department of Commerce.

The web address for the Center for Advanced Friction Studies is

http://frictioncenter.engr.siu.edu/center_info.html

Center for Alzheimer's Disease and Related Disorders

The School of Medicine's center in Springfield has research projects that cover a wide range of basic and clinical studies relating to normal aging, Alzheimer's disease, Parkinson's disease, vascular dementia and gait disturbances in the elderly.

The web address is: <http://www.siumed.edu/alz/>

Center for Autism Spectrum Disorders

The Center for Autism Spectrum Disorders is a division of the Rehabilitation Institute and a partner in Illinois The Autism Program. The Center participates in the University's teaching, research, and service missions, with a focus on children with autism and their families.

The Center provides interdisciplinary training in clinical services and research for students in the Rehabilitation Institute. In addition, the Center has collaborated with other SIU programs in teaching and research related to autism. The Center also serves as a referral site for the assessment and treatment of children with autism spectrum disorders and their families. The Center serves as a resource for community schools, Early Intervention services, and other human service organizations in the region.

The web address is: <http://www.casd.siu.edu/>

Center for Archaeological Investigations

The Center for Archaeological Investigations engages in research in the American Midwest and Southeast, Guatemala, Peru, and the western Pacific. Funding is provided by state and federal agencies, and private institutions. The Center also conducts archaeological research for firms and government agencies that are required to comply with environmental and antiquities laws. The Center conducts an annual field school with the Department of Anthropology and provides thesis/dissertation data and research opportunities for numerous students of archaeology. It also curates large collections, representing over 50 years of research in the American Midwest and Southwest.

The web address for the Center for Archaeological Investigations is <http://cai.siu.edu/>

Center for Delta Studies

The Center for Delta Studies builds linkages among scholars in the SIU system, universities in the region encompassed by the Delta Regional Authority, and between researchers and the larger publics. Its mission is to promote ground-breaking research that will contribute innovative solutions to the endearing problems of poverty

and associated human and ecological endemic to the Delta region.

The web address for the Center for Delta Studies is <http://www.siu.edu/~delta/>

Center for Dewey Studies

The Center for Dewey Studies was established in 1961 as the "Dewey Project." In the course of collecting and editing the works of John Dewey (1859–1952), the Center has amassed a wealth of source materials for the study of America's quintessential philosopher-educator. By virtue of its publications and research, the Center has become the international focal point for research on Dewey's life and work.

In 1990, the staff of the Center completed work on the monumental thirty-seven-volume edition of Dewey's complete writings, *The Collected Works of John Dewey, 1882–1953*, published by the Southern Illinois University Press. Support for this project was provided by the National Endowment for the Humanities, an independent federal agency, as well as the John Dewey Foundation and individual donors. In 1996, the Center in cooperation with the IntelLex Corporation, published an electronic edition of *The Collected Works*.

In 2005, the Center, in cooperation with the IntelLex Corporation, published the third volume of *The Correspondence of John Dewey, 1871-1952*. This electronic edition, funded by the National Endowment for the Humanities, the John Dewey Foundation, and individual donors, makes available more than 20,000 items of John Dewey's correspondence in an easily searchable database. The Center is now at work on an edition of Dewey's class lectures. Additional information about activities of the Center can be found at its website, <http://www.siu.edu/~deweyctr/>

Center for Ecology

The focus of the Center for Ecology is to provide an umbrella for ecological research, teaching, and training at SIUC. More than 30 faculty, staff, and students from several departments in the Colleges of Agricultural Sciences, Engineering, Science, and Liberal Arts participate in this interdisciplinary program. Independent, cooperative, and collaborative research conducted by the Center faculty takes advantage of the exceptional range of natural resources of the region across a variety of ecosystems in Illinois, throughout the United States, and around the world. The web address for the Center for Ecology is: <http://www.ecology.siu.edu/>

Center for Environmental Health and Safety

This center is responsible for facilitating and monitoring assurances of campus-wide compliance to policies and guidelines of the University, state agencies, Environmental Protection Agency, Illinois Emergency Management Agency-Division of Nuclear Safety Agency, Occupational Safety and Health Administration, and National Institutes of Health, with respect to biological health and safety. The center's web address is <http://www.cehs.siu.edu/>

Illinois Soybean Center

Established in 1997, the Illinois Soybean Center focuses on developing information and technologies that enhance soybean production in Illinois and the North Central region, increase soybean utilization by the global community, contribute to the base of scientific knowledge, and educate human capital in the various attributes and applications of soybean. SIUC faculty members in the College of Agricultural Sciences collaborate with those in the College of Science and the School of Medicine, along with university colleagues throughout the nation, to implement interdisciplinary research, education, and outreach programs on soybeans. The Center addresses issues related to all aspects of soybean production, utilization and policy, including breeding and genetics, biotechnology, crop protection, human nutrition and food, animal nutrition, marketing, and consumer acceptance. For more information visit the Center's website at http://coas.siu.edu/default2.asp?active_page_id=1447

Center for Innovation (C41)

The purpose of the Center for Innovation (C41) is to promote interdisciplinary research, teaching, and service to the region through cooperation among the SIUC College of Business, Engineering, Science, and Law. Development and commercialization of innovations require knowledge and expertise from areas represented by these colleges. By bringing the faculty and students of those colleges together for research projects, classes, and service, the center serves as a mechanism for educating students from multiple disciplines in commercialization of innovation, for developing research into innovation, and for regional economic development through promotion of innovation. For more information visit the Center's website at <http://www.innovation.siu.edu/>

Center for Integrated Research in Cognitive and Neural Sciences (CNS Center)

The mission of the Center for Integrated Research in Cognitive and Neural and Sciences (CNS Center) is to advance and disseminate knowledge in areas of Neuroscience and Cognitive Behavior. Our faculty affiliates are located on both the Carbondale and Springfield campuses. This diverse group conducts a wide variety of nationally recognized research activities on topics ranging from basic neural connectivity, to ion channel physiology, to studies of human behavior. A goal of the Center is to encourage the development of interdisciplinary research collaborations. Research opportunities for students are available at both graduate and undergraduate levels. For more information, visit the Center's website: <http://circns.siu.edu>

Center for Rural Health and Social Service Development

The Center for Rural Health and Social Service Development enables faculty, staff, and students to work as partners with health and social service agencies to strengthen rural health infrastructure and to promote

opportunities for health enhancement in rural communities of the region, the State, and the Nation. The center develops grants and projects, conducts cooperative research efforts, needs assessments, demonstration projects, and program evaluations; designs and implements training programs; tests new models of health care delivery; and develops policy recommendations to improve the health of rural populations. It has received grants from many public and private agencies concerned with health and social service issues, including the National Institutes of Health, Department of Health and Human Services, and the Centers for Disease Control and Prevention. Current priorities include rural health, transportation, childhood obesity, health and social service workforce, and health care access. For more information, visit the center's website: <http://crhssd.siu.edu/>

Center For Rural Schools And Communities

The Center for Rural Schools and Communities serves as a catalyst for collaborative research and outreach with regional schools and community agencies. Center goals emphasize the following principles:

1. To seek and secure external funding to support the improvement of teaching and learning and human Service delivery to rural schools and communities.
2. To foster and support interdisciplinary efforts to respond to complex society issues like the achievement gap between student groups.
3. To foster and support research and service opportunities for faculty and both undergraduate and graduate students.

The Center for Rural Schools and Communities supports research on best practice for teaching and learning and delivery of human services to rural schools and communities.

The Center for Workforce Development

The Center for Workforce Development was established to create a research, education and training group that provides students and faculty with the opportunity to collaborate on research and development, education and training, and information and product dissemination. The objectives of the Center emphasize:

1. Research and Development—addressing the broad array of issues affecting the nature of the workforce and workplace settings.
2. Education and Training—addressing development and delivery of customized workforce education and training programs/courses in collaboration with agencies and organizations in the public and private sectors.
3. Information and Product Dissemination—addressing the need for dissemination of curriculum and instructional resources useful for promoting work-related education and training.

The Center for Workforce Development will serve as a broker in the exchange and sharing of information and higher education resources associated with the nature of the workplace and workforce. Further, the Center will act as a catalyst in bringing together leaders from business, research, education and government to interact and work together to formulate public policy associated with workforce development. For more information, visit the center's website: <http://wed.siu.edu/Public/CWD/index.php>

Coal Research Center

The Coal Research Center assists in the development and implementation of research education and service activities related to the extraction and utilization of coal. Established in 1974, the Center has worked to advance the application of new technologies in mining, power production and to identify new uses and markets for Illinois coal. Research relating to mine productivity, mine reclamation, mine subsidence, coal processing, coal characterization, clean coal technology, and environmental policy have been conducted at SIUC. Faculty and students from such diverse fields as engineering and technology, science, business, education, law, and agriculture have contributed to the University's international reputation in energy and environmental research.

Since 1990 it has managed the Illinois Coal Development Park at SIUC's Carterville Campus in cooperation with the Illinois Department of Commerce and Economic Opportunity. Efforts at the Coal Development Park have targeted technologies that promise near term commercial application by coal producers and users. Technologies developed here include coal processing, refining, gasification, and coal combustion by-product utilization.

The Center also operates a unique program that offers industry improved dragline safety and productivity. The Dragline Productivity Program offers computer-based instruction and hands-on simulator experience for operators and supervisors from mining operations around the world. The web address for the Coal Research Center is <http://www.crc.siu.edu/>

The Center has supported the development and deployment of clean coal technologies. These activities are highlighted by the Clean Coal Review Board program, initiated January 2000 with a \$25 million grant from an electric utility company. This initiative has already assisted in the commercial application of several coal processes developed or tested at SIUC.

Fisheries and Illinois Aquaculture Center

Graduate research in fisheries, aquaculture, and aquatic ecology is conducted through the Fisheries and Illinois Aquaculture Center. Graduate study in fisheries, culminating in the Master of Science or Doctor of Philosophy degree, is offered in the Department of Zoology. In addition to a wide variety of support courses, ten fisheries courses are taught. Research activities include studies in fish management, fish genetics, aquatic

toxicology, and aquaculture. Emphases include warmwater, coolwater, and coldwater fishes native to Illinois. There are also opportunities to work with exotic species of fishes and shellfishes, both freshwater and marine, particularly through the international fisheries program. Some of the areas of research stressed are trophic ecology, water quality, large river ecology, pond culture, tank culture, polyculture, culture system development, nutrition, fish physiology, fish genetics, utilization of nursery areas, ecology of larval fishes, age and growth studies, introduction of hybrid fish species, utilization of power plant cooling lakes, population dynamics, and aquatic toxicology. Facilities in the Fisheries and Illinois Aquaculture Center include offices, well equipped laboratories, a computing faculty, aquarium rooms, culture ponds, a greenhouse for hydroponic and recirculating water system studies and an 8,300 square-foot wet-laboratory building and a 90-pond research/demonstration facility.

The web address for the Fisheries and Illinois Aquaculture Center is <http://fisheries.siu.edu/>. Phone number: 618-536-7761.

Global Media Research Center

The Global Media Research Center serves as an intellectual hub for research on international, national and local media involving the College of Mass Communication and Media Arts and University faculty and in partnership with colleagues and institutions around the world. Center-sponsored research produces a body of knowledge that expands and extends the critical dialogue surrounding issues of importance in global media studies.

The phrase "global media" designates not only the long-established profession of foreign news reporting, and international sales of television programs and recorded music. It also denotes the global advertising and public relations industries, world cinema, business telecommunications, and other worldwide applications of the internet, including those of arts, environmentalist, religious and other civic groups. Research in this field may address global media activities, engage in comparative media studies, investigate media responsibility and ethics, or explore the interface between media arts and research.

The Center builds upon SIUC's long tradition of international academic exchange and takes it a step further by conducting a strong and innovative research program directed to the dynamic, complex field of global media communication. The Center organizes seminar programs with outside speakers as well as campus presentations by faculty and graduate students, which help create a steady momentum and alertness to new and unfolding issues. The Center also hosts visiting scholars and artists, arranges exchange programs for faculty and students, and engages in grant-sponsored research initiatives. For more information visit the Center's website <http://gmrc.siu.edu/>

The Materials Technology Center

The Materials Technology Center was established in 1983 as a result of a high-technology thrust by the state of

Illinois. Charged with stimulating materials-related research on the campus of SIUC, the center accomplishes this mission through initiating interdisciplinary research in the colleges of engineering and science, conveying results to industrial partners and sponsoring international technical conferences and seminars. The center encourages research in new areas by administering a competitive grant program that funds start-up projects for faculty entering new areas of materials research and provides technical, administrative and financial support to start-up and established research programs.

A historical strength of the center has been research in the area of carbon-carbon composites. Regarded as a national leader in characterization and fabrication, the center has expanded its leadership and expertise in carbon science to include studies in areas such as fullerenes and development of carbon material precursors.

Research programs in electrorheological fluids, catalysis, magnetic materials, superconductivity, materials to reinforce civil engineering structures, polymeric matrix composites, chemical vapor infiltration and plasma induced deposition techniques represent the diverse nature of materials research supported by the center.

Under the guidance of established experts, students associated with MTC receive hands-on training and valuable experience. The total program of the center offers an opportunity for students at all levels of experience to train in the fields of materials science and engineering.

The web address for the Materials Technology Center is <http://mtc.engr.siu.edu/>

Meyers Institute for Interdisciplinary Research in Organic and Medicinal Chemistry

The Meyers Institute, founded in 2000 through an endowment provided by Dr. Cal Y. Meyers, Distinguished Professor Emeritus, advances knowledge in fundamental and applied organic and medicinal chemistry. Institute personnel include members of the College of Science, College of Agricultural Sciences, and School of Medicine, among others. In conjunction mainly with the Department of Chemistry, undergraduate and graduate students and postdoctoral fellows are afforded stipends to participate in advanced research projects. As part of its activities, the Institute hosts annual symposia.

The Institute's web address is

<http://www.chem.siu.edu/meyers-institute/Homepage.html>

Pontikes Center for Management of Information

The Center in the College of Business and Administration was established in 1989 to advance practical and theoretical knowledge and learning in the management of information.

The Pontikes Center's mission is:

- To educate undergraduate and graduate students, computer industry professionals, and business managers on effective management of information.

- To rethink redesign, and reengineer the management of information.
- To bring together insights of the artistic, scientific, and professional disciplines in a coordinated program focusing on the advancement of practical and theoretical knowledge and learning in management of information by business and other organizations in a global economy.
- To focus the experience, commitments and capabilities of faculty who are now dealing with management of information in isolation in different departments and colleges to develop a globally reputed international program of research and instruction.

The Center will be an integral part of SIU's information technology thrust in creating the university of the future. The center's website address is

<http://www.business.siu.edu/Pontikes/default.html>

The Paul Simon Public Policy Institute

Former United States Senator Paul Simon of Illinois launched a public policy institute at Southern Illinois University Carbondale in January 1997 and served as its founding director until his death in December 2003. Mike Lawrence, who joined the institute July 1, 1997 as its associate director, became director in October 2004 and served until November, 2008. In April, 2009, he was succeeded by David Yepsen, longtime Des Moines Register political columnist and reporter. Yepsen also teaches a journalism course in political reporting.

The institute acts on significant and controversial issues impacting the region, the state, the nation and the world. It is committed to developing and working to implement approaches that could bring concrete, positive results in tackling some of the most difficult challenges in the public policy arena. The institute focuses its efforts on fostering:

- Ethical conduct in government;
- Opportunity and fair treatment for citizens in America and throughout the world; and
- Promoting responsible citizenship for all Americans--but particularly for young Americans.

The institute played a pivotal role in the enactment of the most substantial Illinois campaign finance reform in nearly 25 years, helped fashion recommendations from a bipartisan group of former United States Senators on how to assure the fiscal viability of the Social Security system, and spearheaded efforts to establish a dental clinic on campus for the underprivileged in southern Illinois. Major issues on the institute's agenda have included areas such as campaign finance reform, legislative redistricting, education, access to health care in rural and underserved areas, foreign policy matters, poverty, literacy and civic leadership development for young people.

The institute has enriched the academic environment of campus with its many symposiums, programs and speakers. Past speakers have included such figures as former First Lady Barbara Bush, former U.S. Senator and

1972 Democratic Presidential candidate George McGovern, human rights activist Coretta Scott King and legendary CBS newsmen Walter Cronkite.

Additional information on the institute can be found at <http://www.paulsimoninstitute.org>

Safety Center

The Safety Center was established in 1960 and is affiliated with the Department of Health Education and Recreation. The center's research activities, carried out by faculty, staff, and graduate students, focus on injury control and prevention and traffic safety. The center also offers training programs in motorcycle rider safety, emergency/evasive driving/protective services, and child and occupant safety protection. It provides consulting services to business and agencies; holds short meetings, courses, seminars, and conferences on a wide range of injury prevention and health promotion topics. The center's programming and research activity can be viewed at the Department's Web page, <http://web.coehs.siu.edu/Public/her/>

Wildlife Research Laboratory

Since its founding in 1950, the Laboratory has achieved a distinguished record training graduate students in basic and applied principles of vertebrate ecology and wildlife biology. It is a comprehensive program that is recognized among the premier wildlife research units in the nation. Independent, cooperative, and collaborative research supported by industry, foundations, and state and federal agencies lead to better understanding and management of natural resources. Areas of acknowledged laboratory expertise include the biology and ecology of game, endangered, and non-game wildlife; land-use impact on wildlife resources; wildlife and environmental toxicology; waterfowl/wetland ecology; and the epizootiology of zoonotic and other diseases in wildlife. The laboratory has pioneered in the reclamation and enhancement of mined lands for the benefit of various resources; and current efforts provide unique research and training opportunities. More than 30 projects directed by laboratory staff currently afford graduate fellows and research assistants broad and varied research opportunities. These activities exceed \$1,000,000 each year in contracts and grants, resulting in significant contribution to academic needs of students and staff and requests for service by state, federal, and private agencies.

The web address for the Cooperative Wildlife Research Laboratory is <http://wildlife.siu.edu/>

Research Support Facilities

The services of several centralized research support facilities are available to faculty, staff, and students at minimal cost. IMAGE (Integrated Microscopy and Graphics Expertise) provides training, technical service, and research in electron, atomic-force, and light microscopy (www.image.siu.edu). It also offers technical assistance to those in need of scientific photography or computer-graphics illustration as part of their research. The Nuclear

Magnetic Resonance Facility houses two instruments: a Varian four-channel Inova 500 and a Varian dual-full band Inova 300 systems (opie.nmr.siu.edu). The Mass Spectrometry Facility (housed within the Chemistry Department but available to researchers across campus) has a variety of instruments and offers qualitative and quantitative analysis services (www.mass-spec.siu.edu). The Laboratory Animal Program, a fully accredited animal facility, is directed by a veterinarian with specialty training in laboratory animal medicine to ensure proper and humane care of research animals (www.iacuc.siu.edu). The Central Research Shop designs and constructs laboratory equipment for special research requirements <http://shops.siu.edu/cenrsrch/>.

Office of Research Development and Administration

The Office of Research Development and Administration (ORDA) offers a number of services for faculty, staff, and students who wish to submit grant applications to funding agencies. Graduate students seeking funding for their research projects (dissertation support, research fellowships, travel grants, etc.) should start with ORDA's website <http://orda.siu.edu/>, which offers access to searchable grants databases (Community of Science), links to funding agencies, and much other grant-related

material. ORDA offers grant-writing workshops for graduate students and publishes a printed and an electronic version of a brochure about seeking grant funding for graduate student research. For this and other information specific to graduate students, visit <http://orda.siu.edu/student/>.

Many of the necessary forms and data required to complete grant proposals are easily available on the website; ORDA staff is available for assistance in proposal preparation. ORDA also works with faculty and student researchers in negotiating grant/contract award agreements, processing awards, and handling invention disclosures.

One of ORDA's responsibilities is to ensure that research conducted at SIUC complies with all applicable federal and funding-agency regulations. Funded or unfunded research that will involve any of the following must have institutional approval before the research project begins: human subjects (including administering questionnaires, conducting interviews, or accessing confidential databases), research animals, radiological materials, hazardous biological materials, recombinant DNA, or hazardous waste. Students should consult ORDA (453-4533) or their graduate advisor for guidance. (See related information in section on Student Responsibility elsewhere in this chapter.)

Accreditations

The Graduate School, as a part of SIUC, is fully accredited by the Higher Learning Commission of the North Central Association of Colleges and Schools 30 N. LaSalle St., Suite 2400, Chicago, IL 60602504 312-263-0456 or 800-621-7440
Web address: <http://www.ncahlc.org/>.

Other accreditations and affiliations include:

AACSB International—The Association to the Advance of Collegiate Schools of Business
777 So. Harbour Island Blvd., Suite 750
Tampa, FL 33602-5730
(813) 769-6526
www.aacsb.edu/

Accreditation Association for Ambulatory Health Care, Inc.
5250 Orchard Road, Suite-200
Skokie, IL 60077
(847) 853-6060
<http://www.aaahc.org>

Accreditation Board for Engineering and Technology (TAC and EAC/ABET)
111 Market Place, Suite 1050
Baltimore, MD 21202-4012
(410) 347-7713
www.abet.org/

Accreditation Commission for Programs in Hospitality Administration (ACPHA)
203 S. Morris Street
P.O. Box 400
Oxford, MD 21654
(410) 226-5527
www.acpha-cahm.org/

Accreditation Review Commission on Education for the Physician Assistant (ARC-PA)
12000 Findley Rd., Suite 240
Duluth, GA 30097
(770) 476-1224
www.arc-pa.org/

Accrediting Council on Education in Journalism and
Mass Communication
School of Journalism
University of Kansas
1435 Jayhawk Blvd.
Lawrence, KS 66045
(785) 864-3973
www2.ku.edu/~acejmc/

American Association of Museums
1575 Eye Street, Suite 400
Washington, DC 20005
(202) 289-9116
www.aam-us.org/

American Bar Association – Legal Ed Hulett H. Askew,
Consultant on Legal Ed to the American Bar
Association
321 North Clark St.
Chicago, IL 60611
(312) 988-5617
www.abanet.org/

American Bar Association Standing Committee on
Paralegals
321 N. Clark Street
Chicago, IL 60610
(312) 988-5617
www.abanet.org/careercounsel/faq.html

American Board of Funeral Service Education
3432 Ashland Avenue, Suite U
St. Joseph, MO 64506
(816) 233-3747
www.abfse.org/

American Camp Association, St. Louis Section
730 Walnut Creek Lane
Town & Country, MO 63017
(314) 560-4014
www.acastlouis.org/

American Chemical Society
1155 16th St., NW
Washington, DC 20036
(202) 872-4589
<http://portal.acs.org/portal/acs/corg/content>

American Psychological Association
Committee on Accreditation
Office of Program Consultation and Accreditation
750 First St., N.E.
Washington, D.C. 20002-4242
(202) 336-5979
www.apa.org/ed/accreditation/

American Registry of Radiologic Technologists (ARRT)
1255 Northland Drive
St. Paul, MN 55120-1155
(615) 687-0048
www.rrrt.org/

American Society of Agricultural and Biological Engineers
(ASABE)
2950 Niles Road
St. Joseph, MI 49085
(269) 428-6321
www.asabe.org/

Association of American Law Schools
1201 Connecticut Ave., N.W.,
Suite 800
Washington, DC 20036-2605
(202) 296-8851
www.aals.org

Association for Assessment and Accreditation of Laboratory
Animal Care
5283 Corporate Dr., Suite 203
Frederick, MD 21703-2879 (301) 696-9626
www.aalac.org/
Association for Behavior Analysis (ABA)
1219 South Park St.
Kalamazoo, MI 49001
(269) 492-9310
www.abainternational.org/

Clinical Lab Improvement Amendment
Illinois Department of Public Health-Health Care Facilities and
Programs (CLIA)
525 West Jefferson Street – 4th Floor
Springfield, IL 62761
(217) 525-0135
www.cms.hhs.gov/clia/

Commission on Accreditation of Allied Health Education
Programs
1361 Park St.
Clearwater, FL 33756
(727) 210-2350
www.caahep.org/

Commission on Accreditation of Athletic Training Education
2201 Double Creek Drive, Suite 5006
Round Rock, TX 78664
(512) 733-9700
www.caate.net/

Commission on Dental Accreditation of the American
Dental Association
211 E. Chicago Ave.
Chicago, IL 60611-2678
(312) 440-4653
www.ada.org/

Commission on Accreditation for Dietetics Education of
the American Dietetic Association
120 South Riverside Plaza
Suite 2000
Chicago, IL 60606-6995
(312) 889-0040 ext. 5400
<http://www.eatright.org/default.aspx>

Commission on Accreditation in Physical Therapy
Education (CAPTE)
1111 N. Fairfax Street
Alexandria, VA 22314-1488
(703) 706-3245
www.apta.org/AM/Template.cfm?Section=Home

Commission on Accreditation of Rehabilitation Facilities
4891 East Grant Road
Tucson, AZ 85712
(520) 325-1044 or (888) 281-6531
www.carf.org/

Committee on Accreditation for Respiratory Care
(COARC)
1248 Harwood Road
Bedford, TX 76021-4244
(817) 803-4313
www.coarc.org/

Council on Academic Accreditation in Audiology and
Speech-Language Pathology
2200 Research Blvd., Mailstop 310
Rockville, MD 20850
(301) 296-5781
www.asha.org/default.htm

Council for Accreditation of Counseling and Related
Educational Programs (CACREP)
1001 N. Fairfax, Suite 510
Alexandria, VA 22314
(703) 535-5990
www.cacrep.org/

Council for Interior Design Accreditation (FIDER)
146 Monroe Center, NW #1318
Grand Rapids, MI 49503-2822
(616) 458-0400
www.accredit-id.org/

Council on Rehabilitation Education (CORE)
(Rehabilitation Counseling Program)
300 N. Martingale Rd., Suite 460
Schaumburg, IL 60173
(847) 394-1785
www.core-rehab.org/

Council on Social Work Education
1725 Duke St., Suite 500
Alexandria, VA 22314-3457
(703) 683-8080
<http://www.cswe.org/>

Educational Leadership Constituent Council
1801 N. Monroe St.
Arlington, VA 22019-1813
(703) 860-7207
www.npbea.org/

Federal Aviation Administration
Flight Standards District Office
1250 North Airport Drive, Suite 1
Springfield, IL 62707-8417
(217) 744-1910
www.faa.gov/about/office_org/field_offices/fsdo/spi/

Illinois Alcohol and Other Drug Abuse Professional
Certification Association, Inc.
401 E. Sangamon Ave.
Springfield, IL 62702
(217) 698-8110
www.iaodapca.org/

Illinois State Board of Education
100 North First Street
Springfield, IL 62777-0001
(217) 782-4330
www.isbe.state.il.us/

International Association of Counseling Services
101 S. Whiting Street, Suite 211
Alexandria, VA 22304
(703) 823-9840
<http://www.iacsinc.org/>

International Fire Service Accreditation Congress
Oklahoma State University
1700 West Tyler
Stillwater, OK 74078
(405) 744-8303
<http://www.ifsac.org/>

Liaison Committee on Medical Education (LCME)
American Medical Association (AMA) LCME
Secretariat
515 North State Street
Chicago, IL 60610
(312) 464-4933
www.lcme.org/

National Association for the Education of Young
Children (NAEYC)
1313 L St., NW, Suite 500
Washington, DC 20005
(800) 424-2460 ext. 11360
www.naeyc.org/

National Association of Industrial Technology (NAIT)
3300 Washtenaw Ave., Suite 220
Ann Arbor, MI 48104
(734) 677-0720
www.nait.org/

National Association of Schools of Art and Design
11250 Roger Bacon Dr., Suite 21
Reston, VA 20190
(703) 437-0700 ext. 10
www.arts-accredit.org/

National Association of Schools of Music
11250 Roger Bacon Dr., Suite 21
Reston, VA 20190
(703) 437-0700 ext. 10
www.arts-accredit.org/

National Association of Schools of Public Affairs and
Administration
1029 Vermont Ave, NW, Suite 1100
Washington, DC 20005
(202) 628-8965 ext. 103
<http://www.naspaa.org/>

National Association of Schools of Theatre
11250 Roger Bacon Dr., Suite 21
Reston, VA 20190
(703) 437-0700 ext. 10
www.arts-accredit.org/

National Automotive Technicians Education Foundation
101 Blue Seal Drive, SE Suite 101
Leesburg, VA 20175
(703) 669-6650
www.natef.org/

National Council for Accreditation of Teacher Education
(NCATE)
2010 Massachusetts Ave., N.W.,
Suite 500
Washington, D.C. 20036-1023
(202) 466-7496
www.ncate.org/

National Recreation and Park Association (National
Accreditation Council)
22377 Belmont Ridge Road
Ashburn, VA 20148
(703) 858-0707
www.nrpa.org/

Society of American Foresters
5400 Grosvenor Lane
Bethesda, MD 20814-2198
(301) 897-8720 ext. 123
<http://www.safnet.org/>

Associations

CENTER FOR ADVANCED RADIATION SOURCES

The University is a member of the Center for Advanced Radiation Sources (CARS), a research consortium composed of Northern Illinois University, the University of Chicago, and Southern Illinois University Carbondale. Membership with CARS provides access to the facilities being developed at the Advanced Photon Source sited in Illinois and facilities at other federal laboratories.

COUNCIL OF GRADUATE SCHOOLS OF THE UNITED STATES AND CANADA

The University is a regular member of the Council of Graduate Schools (CGS) of the United States and Canada. CGS was established to provide graduate schools with both a comprehensive and widely representative organization through which they can counsel and act together. Web address: www.cgsnet.org.

COUNCIL ON RESEARCH POLICY AND GRADUATE EDUCATION (CRPGE) IN THE NATIONAL ASSOCIATION OF STATE UNIVERSITIES AND LAND GRANT COLLEGES (NASULGC)

The Graduate School is an active member of this major research and graduate educational council of the largest association of public research universities in the United States. Web address: www.nasulgc.org.

NATIONAL COUNCIL OF UNIVERSITY RESEARCH ADMINISTRATORS

The National Council of University Research Administrators (NCURA) is an association of individuals involved in the administration of sponsored programs (research, education, and training) primarily at colleges and universities.

OAK RIDGE ASSOCIATED UNIVERSITIES

Since 1980, students and faculty of Southern Illinois University Carbondale have benefited from its membership in Oak Ridge Associated Universities (ORAU). ORAU is a consortium of 98 colleges and universities and a contractor for the U.S. Department of Energy (DOE) located in Oak Ridge, Tennessee. ORAU works with its member institutions to help their students and faculty gain access to federal research facilities throughout the country; to keep its members informed about opportunities for fellowship, scholarship, and research appointments; and to organize research alliances among its members.

Through the Oak Ridge Institute for Science and Education (ORISE), the DOE facility that ORAU operates, undergraduates, graduates, postgraduates, as well as faculty enjoy access to a multitude of opportunities for study and research. Students can participate in programs covering a wide variety of disciplines including business, earth sciences, epidemiology, engineering, physics, geological

sciences, pharmacology, ocean sciences, biomedical sciences, nuclear chemistry, and mathematics. Appointment and program length range from one month to four years. Many of these programs are especially designed to increase the numbers of underrepresented minority students pursuing degrees in science- and engineering-related disciplines. A comprehensive listing of these programs and other opportunities, their disciplines, and details on locations and benefits can be found in the *ORISE Catalog of Education and Training Programs*, which is available at <http://www.orau.gov/orise/educ.htm>, or by calling either of the contacts below.

ORAU's Office of Partnership Development seeks opportunities for partnerships and alliances among ORAU's members, private industry, and major federal facilities. Activities include faculty development programs, such as the Ralph E. Powe Junior Faculty Enhancement Awards, the Visiting Industrial Scholars Program, consortium research funding initiatives, faculty research, and support programs as well as services to chief research officers.

For more information about ORAU and its programs, contact John A. Koropchak, Vice Chancellor for Research and Graduate Dean, ORAU Councilor for Southern Illinois University Carbondale, at 618-453-4526; Monnie E. Champion, ORAU Corporate Secretary, at 865-576-3306; or visit the ORAU Home Page at <http://www.orau.gov>.

ORGANIZATION FOR TROPICAL STUDIES

Southern Illinois University Carbondale is an institutional member of the Organization for Tropical Studies (OTS), a non-profit corporation organized for the purpose of establishing, fostering, supporting and conducting programs in education and research relating to the tropics; to establish, maintain, and operate facilities for these purposes; to publish the results of education and research; and to carry out other activities relating to the advancement of education and research in the tropics. Since its founding in 1963, OTS has become a significant force on the international scene, and it functions as a catalytic agent within Costa Rica and the U.S. scientific community. OTS continues to expand programming into environmental education and other areas where sound ecological knowledge can be used to address societal problems. OTS is the oldest consortium of U.S. universities dealing with tropical biology. It includes over 50 major institutions.

SOCIETY FOR RESEARCH ADMINISTRATORS

The University is a member of the Society for Research Administrators (SRA). Its membership includes administrators in industry, colleges and universities, non-profit research organizations, hospitals, and government agencies. SRA is the premier international organization for research administrators.

Facilities and Services

Employment Services of Career Services

Career Services provides services to students and alumni seeking job search assistance. Career Services Specialists are available to answer career related questions and to discuss employment procedures, job opportunities, resume writing, and interviewing techniques. Career Services also works closely with employers in order to provide direct assistance in filling their job requirements. Inquiries concerning these services should be made to: Career Services, Woody Hall B204, M/C 4703, sronline@siu.edu, 618-453-2391; (FAX) 618-453-1924, <http://careerservices.siu.edu/>

Housing

Residence Halls: Single- and double- occupancy rooms are available in University Housing residence halls for single graduate students. *Neely Hall* in University Park offers some floors designated for students age 21 and older. A variety of dining plan options are available. Utilities are included.

Apartments: SIUC operates a variety of apartment complexes where graduate students may choose to live.

- ***Southern Hills*** has efficiency, one-bedroom and two-bedroom furnished apartments for single graduate students. All utilities are included.
- ***Evergreen Terrace*** has two- and three-bedroom unfurnished apartments for married students, domestic partner students, students with families or single graduate students. Utilities are provided with the exception of electrical usage. A Recreation Program offering children and adult programming is located on site.
- ***Elizabeth Apartments*** offer furnished efficiency apartments, including all utilities, for single graduate students.
- ***Wall & Grand Apartments*** offer two-and four-bedroom furnished apartments, housing four single undergraduate or graduate students. Rent includes utilities, local phone service, Ethernet and cable television. A washer and dryer is provided in each apartment.

For more information, visit our website at www.housing.siu.edu or contact: Contracts Office, University Housing at 618.453.2301 or housing@siu.edu.

Parking on Campus

Students wishing to operate or park a motor vehicle on campus must apply for parking privileges online by going to website address: http://www.dps.siu.edu/pk_welcome.htm

International Programs and Services

The office of director for International Programs and Services (IPS) is responsible for developing and supporting faculty, staff, and students in international education. The

office administers International Development, Study Abroad, International Students and Scholars, and international undergraduate admissions.

Primary goals include increasing the numbers of externally funded grants and contracts in the international arena for SIUC; increasing international enrollment, serving international students, and providing international opportunities for faculty and students. Units of IPS are located in the Northwest Annex B. The web address is <http://www.ips.siu.edu/index.html>.

International Development

The Office of International Development provides university-wide leadership, coordination, and support for a variety of international activities. These activities include research and dissemination of information on external funding opportunities, development and administration of grants and contracts, maintenance of an international projects database, administration of international linkage agreements, coordination of Women and International Development activities, sponsorship of international forums, administrative support for international alumni, international student recruitment, and assistance with international visitors and protocol. A major focus of office activity is to assist faculty with grant proposals, training contracts, and related activities of an international nature.

The Office of International Development is located on the second floor of Northwest Annex, B wing (618-453-3070). Additional information can be obtained from the office Internet page <http://www.ips.siu.edu/ID>.

International Students and Scholars

The International Students and Scholars division provides comprehensive programs and services for international students and scholars from pre-arrival correspondence to post-graduate concerns. These programs and services include processing of undergraduate admission applications, serving as liaison with foreign governments and sponsoring agencies, providing certification for foreign currency exchange, and other needs. This office has been designated by the U.S. Citizenship and Immigration Services (USCIS) as having the official responsibility for interpretation and adherence to USCIS laws and regulations as they apply to non-immigrant students and faculty. Also designated responsible officers administer proper compliance with the Exchange Visitor Program for the University. Assistance with USCIS regulations, forms, and procedures is provided to all non-immigrants related to University and broader community affairs.

Integral educative services include orientation programs, arrival and housing assistance, personal counseling and referral, a *Handbook for International Students and Faculty*, a newsletter (The International Dateline), advisement of in-

ternational student associations, and a re-entry workshop for internationals going home.

Special programs which promote an international dimension of cross-cultural exchange to the broader community are provided. An annual International Festival and various national day celebrations are held. The Community Programs subdivision in cooperation with the International Friends Club coordinates a Host Family Program, International Speakers' Bureau, English in Action, Language Exchange, American and International Cooking Exchange, an International Spouses Group, and a Loan Closet.

The International Students and Scholars division is located on the first floor of Northwest Annex B (618-453-5774). The web address for the office is <http://www.ips.siu.edu/ISS>.

Study Abroad Programs

Study Abroad Programs coordinates overseas services for American students, including international grant programs, exchanges, and study abroad programs. It is the central referral point for information on the student Fulbright program and on the British Marshall, National Security Education Program, and Rhodes scholarships. Graduate students may also participate in inter-university international exchange programs and in travel/study programs offered during the summer and intercession periods under the auspices of this division.

Study Abroad Programs is located on the second floor of the Northwest Annex B (618-453-7670).

The web address for the office is:

<http://www.ips.siu.edu/SA/aboutus.html>

Economic and Regional Development

The University established the Office of Economic and Regional Development (OERD) in 1986 as a means to improve the quality of life and economic climate in southern Illinois. Located in the Dunn-Richmond Economic Development Center south of campus at the intersection of Route 51 and Pleasant Hill Road, OERD administers the Small Business Development Center, Center for Rural Health and Social Service Development, , Illinois Manufacturing Extension Center, Small Business Incubator, Southern Illinois Entrepreneurship Center, and the Southern Illinois Research Park. Additionally, the department manages several other special projects and training programs to support entrepreneurs, inventors, and regional community partners. Individuals or businesses may rent space for meetings, conferences or receptions. Space may also be leased for new business start-up or existing business expansion. The facility also offers exhibition space in the beautiful Art Atrium which is available for artists to display their artwork. For more information about OERD's programs and services, access our website at www.growSI.com.

Student Health Center

The Student Health Center supports the academic mission of the University with a broad range of health care services that help reduce physical health, emotional, and financial health barriers to achieving academic success. Available services include: primary healthcare, dental services, pharmacy, immunizations, mental care, wellness services, sports medicine, physical therapy, and medical insurance. Our website can be accessed at <http://shc.siu.edu/>

ELIGIBILITY AND FEES

Any student enrolled at Southern Illinois University Carbondale who has been assessed the Student Medical Benefit Primary Care Fee is eligible for all on campus services. The Student Medical Benefit Extended Care Fee is assessed each semester and funds the insurance benefits for emergency room, ambulance, specialty care, hospitalization, outpatient surgery, in-patient mental health care and accidental death and dismemberment. Students who have paid the Student Medical Benefit Extended Care fee spring semester are also covered during the summer semester. Spouses of students are eligible to purchase the on-campus primary care benefits for each semester that the sponsoring student is enrolled.

AVAILABLE SERVICES

On-Campus Medical Clinic: (618) 453-3311

The Student Health Center (SHC) provides the same primary care services offered by most private general physicians. The SHC clinic is staffed by physicians, a psychiatrist, physician assistants, registered nurses, psychologists, counselors and support staff. The Student Medical Benefit Primary Care Fee paid by SIUC students includes all routine office care and a wide range of diagnostic tests including laboratory and x-ray for a co-pay \$6 per visit. Appointments may be scheduled from 7:30 a.m. to 4:30 p.m. Monday through Friday at (618)536-2391. TDD number for the hearing impaired is (618) 453-3384. For after hours emergencies call 911 or go to the emergency room.

Immunization Compliance: (618) 453-3311

Illinois law requires proof of immunity for Tetanus, Diphtheria, Measles, Mumps and Rubella for all persons entering a four-year public or private institution of higher education before registering for a second semester. A non-refundable late compliance fee is assessed all students who fail to provide proof of immunity or have not begun to receive the necessary series of immunizations by the end of the seventh week of the semester. The Centers for Disease Control (CDC) recommends meningitis vaccinations for all college students, particularly for those living in residence halls that are at increased risk of infection. To schedule an appointment for an immunization, call the Student Health Center at 618-453-3311.

Pharmacy: (618) 453-4417

Prescriptions, over-the-counter drugs, and other items are available at the pharmacy. Prescriptions from any

physician may be filled. Pharmacy items may be purchased by cash, check, credit card, Debit Dawg, or billed to a student's Bursar account. Pharmacy and prescription drug cards may not be used at the pharmacy.

Sports Medicine and Physical Therapy: (618) 453-1292

We offer a comprehensive approach towards the evaluation and treatment of activity-related injuries and physical impairments. After evaluation, recommendations are made which may include a supervised rehabilitation/treatment plan, a self-care plan or referral to a physician. Our therapy pool provides an aquatic environment for patients to facilitate the rehabilitation process.

Student Dental Service: (618) 536-2421

Good oral care is one of the easiest ways to positively impact your overall health. We offer emergency and routine dental care for students. Routine dental services are provided on a fee-for-service basis.

Wellness Center: (618) 536-4441

The Wellness Center assists students in making healthy lifestyle choices about stress management, nutrition, sexuality, alcohol, tobacco and other drug use. Individual consultations, group experiences, skill building and support for issues impacting student health are key to the Wellness philosophy.

Student Outreach Clinics

A Student Health Center satellite office is available at the Student Health Assessment Center in the Student Center and in the Trueblood Residence Hall. Nurse consultations are free of charge and no appointment is necessary. SHAC is open Monday- Friday 1:00 p.m. to 4:30p.m.

Disability Support Services

Disability Support Services (DSS) provides federally mandated academic and programmatic support services to students with disabilities. DSS provides readers, notetakers, interpreters, adapted testing, adapted textbooks, and other services to qualified students with disabilities. Other disability services are located throughout the University in integrated settings. DSS provides centralized coordination and referral.

In order to utilize DSS services, students generally come to the DSS office to open cases. These transactions involve interviews, reviews of student-supplied documentation, and making Disability Accommodations Agreements.

Documentation of disabilities should specify particular disabilities, be generated by appropriate professionals (medical doctors, psychologists, psychiatrists, etc.), and be reasonably current. Ideally, there should be recommendations for particular accommodations.

Students are responsible for identifying themselves to DSS, for providing documentation, and for requesting accommodations.

DSS staff try to be available on a walk-in basis, but students may ensure prompt attention by calling ahead for appointments.

DSS can be reached at: Voice (618) 453-5738; TDD (618) 453-2293, or FAX (618) 453-5700. E-mail: dsssiu@siu.edu or visit DSS website at

<http://disabilityservices.siu.edu/>, or come to the office in Woody Hall B150.

Center for English as a Second Language

The Center for English as a Second Language (CESL) is a unit of the Department of Linguistics on the campus of Southern Illinois University Carbondale and is staffed by members of the University faculty. The intensive English language program at CESL is open to prospective University undergraduate and graduate students, professionals and others wanting to learn English as a second language.

Graduate students who complete or place out of the highest intensive level may enroll in a special Graduate student English course specifically designed to prepare them for graduate studies. Activities involving oral reports, research papers, critical reviews, and specialized readings associated with the individual student's major field of study are included.

Graduate Teaching Assistants recommended by their departments may take a specialized course of instruction for prospective teachers. Taped practice teaching are critiqued along with instruction in basic teaching techniques and methodology with a view toward improving the teacher's delivery in the English language.

The CESL office is in Faner 3242, (618) 453-2265. The CESL web address is <http://cesl.siu.edu/>

Office of the University Ombudsman

The Office of the University Ombudsman is an impartial and confidential resource which assists individuals in resolving problems that arise within the University. The Ombudsman Office is an independent, neutral office reporting directly to the Chancellor. The office acts on complaints or suggestions from students, faculty, and staff in an attempt to ensure that members of the University community receive fair and equitable treatment within the University system. The Ombudsman Office also brings to the attention of those in authority any inadequacies in existing University procedures that might jeopardize the rights and privileges of members of the University community.

The Ombudsman Office helps individuals resolve a broad range of problems, including academic issues, employment matters, and concerns regarding University services. Such assistance may include: advising individuals on steps to take so that their claims may be heard or their questions answered; making referrals to other offices; informally investigating claims of unfair treatment or erroneous procedures; engaging in mediation or other third-party intervention; and helping to access and

understand University grievance mechanisms when informal methods are unsuccessful or unsuitable.

As an informal conflict resolution resource, the University Ombudsman Office supplements, but does not replace, any formal University channels. The Ombudsman Office maintains no institutional records, and the names of persons requesting help cannot be used in the investigation of a case without permission. ***Contact with the Ombudsman Office does not constitute notice to the University.*** The office however, can assist individuals in providing such notice to the proper administrators. The Ombudsman Office has the authority to access official records as required to fulfill its functions. The Ombudsman and staff are not attorneys and do not give legal advice or participate in any legal or formal administrative process. The University Ombudsman Office adheres to the profession's code of ethics and standards of practice. All Ombudsman records, contacts, and communications are confidential.

The Ombudsman Office is located in Woody Hall C302; hours are 8:00 a.m. to 4:30 p.m., Monday through Friday; contact numbers are (618)-453-2411 (voice) and (618) 453-2260 (fax). More information about the office may be found at: <http://ombuds.siuc.edu/>.

Policy Accommodating Religious Observances of Students

Admissions/Registration

The University's admissions process provides ample opportunity for admission and registration activities without conflicting with religious holidays and observances. However, students may receive another appointment when an appointment for admission counseling, or an appointment for academic advisement, or an appointment for registration for classes falls on a date or at a time that would conflict with the student's observances of major religious holidays. The individual student must notify in writing the appropriate admissions officer or academic adviser of the conflict with the student's observance of the religious holiday. That notification shall be made immediately after the student's receipt of the appointment or at least five work days prior to the appointment time, whichever is later.

Class Attendance

Students absent from classes because of observances of major religious holidays will be excused. Students *must notify the instructor at least three regular class periods in advance of an absence from class for a religious holiday* and must take the responsibility for making up work missed.

Examinations

Instructors are requested not to schedule class examinations on dates that would conflict with major religious holidays. In the event an examination must be scheduled on a date that conflicts with a student's required

observance of a religious holiday, the student should be given reasonable opportunity to make up the examination. It is the student's responsibility to notify the instructor of the class when the examination will be missed. That notification must occur at least three regular class meeting periods in advance of the absence or at the time the announcement of the examination is made, whichever is later.

Grievance Procedure

A student who believes that he or she has been unreasonably denied an educational benefit due to his or her religious belief or practices may petition in writing as follows:

Cases involving class attendance or class examinations that are unresolved at the class instructor level may be appealed by the student by filing a petition in writing, within thirty (30) calendar days of the incident being appealed, to the chair or coordinator of the department or program in which the course is offered. In the event the case is not resolved to the student's satisfaction at the department/program level within five (5) working days after the chair's receipt of the petition, the student may petition in writing to the dean of the school or college to which that teaching department or program reports. The student's petition to the school or college level must be filed with the dean within five (5) working days of the decision at the department level. Should the case not be resolved to the student's satisfaction at the school or college level within five (5) working days of the petition filing at that level, the student may petition the Provost. If the student is still not satisfied at that level within the five (5) working day time period, he or she may petition to the Chancellor within another five (5) working days. Decisions of the Chancellor may be appealed to the President, and to the Board of Trustees if necessary, in accordance with Bylaws of the Board of Trustees.

In cases involving admissions, *the grievance process should follow the time frames described above*, with the initial petition being filed with the Graduate School Dean, which is the only filing point prior to the Provost.

CHAPTER 2

Academic Programs, Graduate Faculty, and Courses

The academic programs, graduate faculty, and course descriptions are outlined in this chapter.

The official descriptions of programs leading to graduate degrees are arranged below in alphabetical order. The faculty affiliated with each program is listed at the beginning of the description and the courses at the end. The college or school in which the program is located is noted and web and e-mail addresses are shown at the right margin. Admission and degree requirements which are listed in Chapter 1 are minimum standards. The student should consult the specific program description for additional criteria imposed by the department. All programs are cross-listed to aid in locating the official description. Several departments offer one or more concentrations as noted in Chapter 1 within the major, the requirements for these concentrations may be found in the program description.

Graduate instruction is the responsibility of the graduate faculty. The faculty are arranged in terms of their departmental affiliations. Faculty teaching in interdisciplinary programs are listed under the appropriate programs and are identified as to the department in which they hold an appointment. The first of the two dates listed with the name of a faculty member indicates the year in

which the highest degree was earned; the second date indicates the year when the person first became a faculty member at Southern Illinois University Carbondale.

The 400- and 500-level courses offered by Southern Illinois University Carbondale are listed numerically after each program description. The first entry for each course is a three-digit identification numeral. Courses numbered 400–499 are open to both seniors and graduate students, unless designated otherwise. Courses numbered above 499 are for graduate students only. Following the course identification number is another number which indicates maximum credit allowed for the course. The maximum may vary, and specific semester hours may be assigned for each term a course is offered. Following the course description may be prerequisites which must be satisfied before a student will be permitted to enroll. Graduate students will not receive graduate credit for Pass/Fail grades taken at the 400 level. Graduate credit is awarded for 500-level courses which have been approved to be graded *S/U* (Satisfactory/Unsatisfactory) only. All courses offered in a specific term will be listed in the appropriate *Schedule of Classes* which can be found at

<http://registrar.siu.edu/records/schedclass.htm>

Accountancy	Educational Psychology	Molecular, Cellular, and Systemic
Advanced Energy and Fuels	Electrical and Computer Engineering	Physiology
Management	Engineering	Music
Africana Studies	English	Pharmacology and Neuroscience
Agribusiness Economics	Environmental Resources and Policy	Philosophy
Agricultural Sciences	Food and Nutrition	Physician Assistant
Animal Science	Foreign Languages and Literatures	Physics
Anthropology	Forestry	Plant Biology
Applied Linguistics	Geography and Environmental	Plant, Soil and Agricultural Systems
Architecture	Resources	Political Science
Art	Geology	Psychology
Behavior Analysis and Therapy	Health Education	Public Administration
Biological Sciences	Higher Education	Recreation
Biomedical Engineering	History	Rehabilitation Administration
Business Administration	Historical Studies (Ph.D.)	Rehabilitation Counseling
Chemistry	Kinesiology	Social Work
Civil Engineering	Legal Studies	Sociology
Communication Disorders and	Manufacturing Systems	Special Education
Sciences	Mass Communication and Media Arts	Speech Communication
Community Health Education	Mathematics	Teaching English to Speakers of Other
Computer Science	Mathematics and Science Education	Languages
Creative Writing	Mechanical Engineering and Energy	Theater
Criminology and Criminal Justice	Processes	Women's Studies
Curriculum and Instruction	Medical Dosimetry	Workforce Education and Development
Economics	Mining Engineering	Zoology
Education (Ph.D.)	Molecular Biology, Microbiology, and	
Educational Administration	Biochemistry	

ACCOUNTANCY

www.cba.siu.edu/acct
sobery@business.siu.edu

COLLEGE OF BUSINESS

Graduate Faculty

Basi, Bartholomew, Professor, *Emeritus*, C.P.A., D.B.A., Indiana University, 1971; 1978.

Burnett, Royce D., Assistant Professor, C.P.A., C.M.A., Ph.D., Oklahoma State University, 2003; 2009. Cost and Managerial.

Karnes, Allan, Professor, C.P.A., M.A., J.D., Southern Illinois University Carbondale, 1986; 1977. Taxation and auditing.

Morris, Marc E., Assistant Professor, J.D., Ph.D., Southern Illinois University Carbondale, 2009; 2009. Taxation and Financial.

Odom, Marcus, Professor and *Director*, C.P.A., Ph.D., Oklahoma State University, 1993; 1998. Accounting Information systems and auditing.

O'Donnell, Ed, Associate Professor, C.P.A., Ph.D., University of North Texas, 1995; 2009. Auditing and Accounting Information Systems.

Rivers, Richard, Professor, *Emeritus*, C.P.A., D.B.A., Kent State University, 1976; 1978.

Rodriguez, Ramon, Assistant Professor, C.P.A., Ph.D., University of Texas at El Paso, 2009; 2008. Taxation.

Sobery, Julie, Associate Professor, C.P.A., Ph.D., Saint Louis University, 1982; 1985. Financial accounting and accounting theory.

Tucker, Marvin W., Professor, *Emeritus*, Ph.D., University of Alabama, 1966; 1966.

Wacker, Raymond, Associate Professor, C.P.A., Ph.D., University of Houston, 1989; 1989. Taxation.

Welker, Robert B., Professor, *Emeritus*, Ph.D., Arizona State University, 1977; 1987.

Wright, Roland M., Professor, *Emeritus*, C.P.A., Ph.D., University of Iowa, 1962; 1966.

Wu, Fred, Professor, *Emeritus*, C.M.A., Ph.D., Texas Tech University, 1975; 1984.

Xu, Li, Assistant Professor, Ph.D., Duke University, 2006; 2008.

The objective of the Master of Accountancy (M.Acc) degree program is to provide an opportunity for students to achieve greater breadth and depth in the study of accountancy than is possible in the baccalaureate program. As preparation for entry into a dynamic profession the curriculum fosters clear, logical, and analytical thought processes, effective oral and written communications, and life-long learning skills. Graduates pursue careers as professional accountants in public practice, industry, financial institutions, government, and other not-for-profit organizations.

Admission

Applicants for admission to the program are required to:

1. Complete all requirements for admission to graduate study as specified by the Graduate School.
2. Complete the Graduate Management Admissions Test (GMAT). Information regarding the GMAT is available through: Graduate Management Admission Test, Educational Testing Service, Box 966, Princeton, NJ 08540. The GMAT requirement is waived for students with an undergraduate major in accountancy from a 4-year undergraduate AACSB accredited institution having an overall grade point average of 3.3 (on a 4.0 scale).

The results of the test must be mailed directly to the director of the M.Acc. Program.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Accountancy. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by per-

sonal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Admission to the program is based on a composite of 1) undergraduate grade point average times 200, and 2) GMAT overall score. These two factors are added together to arrive at a composite score. A composite score of 1100 is required to be admitted into the program. For example, an undergraduate grade point average of 3.2 with a GMAT of 550 would yield a composite score of 1190.

Students whose native language is not English will be required to obtain an acceptable score (550 paper score; 220 computer score) on the Test of English as a Foreign Language (TOEFL) examination before being admitted to the Master of Accountancy degree program.

Differential Tuition and Technology Fee

Starting Fall 2008, the College of Business has implemented a differential tuition surcharge of 15% of applicable tuition for new College of Business majors. The differential tuition surcharge will be assessed at the in-state tuition rate and will be capped at 15 credit hours per semester. If students are charged the differential tuition surcharge, the technology fee (see item below) will not be assessed.

The College of Business assesses College of Business majors a technology fee of \$6.00 per credit hour for Fall and Spring semesters up to twelve semester hours and Summer up to six semester hours. The technology fee is being phased out and will be subsumed under the differential tuition surcharge (see item 16 below). Consequently, students will be charged either the technology fee or the differential tuition surcharge but not both.

Degree Requirements

The Master of Accountancy degree program includes two concentrations from which to choose: 1) Taxation, and 2) Audit/Information Systems. Degree requirements are dependent upon the specialization chosen.

Taxation Concentration:

ACCOUNTANCY STUDIES (6 HOURS)

Two (2) of the following six (6) courses must be completed:

ACCT 411 (3)	Enterprise Network Communication
ACCT 521 (3)	Emerging Issues in Accountancy
ACCT 532 (3)	Advanced Managerial Accounting
ACCT 563 (3)	Advanced Auditing
ACCT 571 (3)	Governmental Accounting
BA 514 (3)	Ethics of Business

TAXATION STUDIES (18 HOURS)

Six (6) of the following eight (8) courses must be completed:

ACCT 541 (3)	Federal Income Tax Concepts
ACCT 542 (3)	Tax Research and Procedure
ACCT 543 (3)	Corporate Taxation
ACCT 544 (3)	Partnership Taxation
ACCT 545 (3)	State and Local Taxation
ACCT 546 (3)	Estate and Gift Tax
ACCT 547 (3)	Tax Accounting Principles
ACCT 548 (3)	International and Interstate Taxation

GENERAL ELECTIVES (6 HOURS)

Two (2) electives (selected in conjunction with the Director of the Master of Accountancy Program) must be completed.

Auditing & Accounting Information Systems Concentration

ACCOUNTANCY STUDIES (6 HOURS)

Two (2) of the following five (5) courses must be completed:

ACCT 521 (3)	Emerging Issues in Accountancy
ACCT 532 (3)	Advanced Managerial Accounting
ACCT 543 (3)	Corporate Taxation
ACCT 571 (3)	Governmental Accounting
BA 514 (3)	Ethics of Business

AUDITING & ACCOUNTING INFORMATION SYSTEMS STUDIES (18 HOURS)

Six (6) of the following nine (9) courses must be completed:

ACCT 411 (3)	Enterprise Network Communication
ACCT 560 (3)	Information Technology Auditing
ACCT 563 (3)	Advanced Auditing
ACCT 567 (3)	Fraud Examination
ACCT 565 (3)	Advanced Accounting Information Systems
ACCT 566 (3)	Accounting Research
BA 560 (3)	Management of Info Systems
BA 562 (3)	Info Systems and Design

GENERAL ELECTIVES (6 HOURS)

Two (2) electives (selected in conjunction with the Director of the Master of Accountancy Program) must be completed.

FOUNDATION REQUIREMENTS

A student who does not have an undergraduate business degree will be required to complete the following (or equivalent):

ACCT 220	Accounting I
ACCT 230	Accounting II
FIN 270, or FIN 280 & FIN 380	The Legal and Social Environment of Business (FIN 270); Business Law I (FIN 280); Business Law II (FIN 380)
MGMT 304	Introduction to Management
FIN 330	Introduction to Finance
MKTG 304	Marketing Management

A student not having an accountancy degree will be required to complete the following (required to be completed prior to enrollment in any graduate course for which the course is a prerequisite):

ACCT 321	Intermediate Accounting I
ACCT 322	Intermediate Accounting II
ACCT 331	Cost Accounting
ACCT 360	Accounting Information Systems
ACCT 341	Federal Income Taxation
ACCT 460	Auditing

Note: The student may request that undergraduate courses taken at universities other than Southern Illinois University Carbondale (SIUC), or that other undergraduate courses taken at SIUC be evaluated as possible substitutes that would meet the above requirements.

The full-time student who qualifies for the minimum program in terms of course work requirements normally may expect to complete the Master of Accountancy degree in one calendar year (two semesters and one summer session).

In order to meet the graduate requirements, the students must obtain a 3.0 grade point average (4.0 = *A*) and obtain a *B* or better in eighty percent of all graduate level courses taken after admission to the M.Acc. program.

Concurrent J.D. and M.Acc. Program

A student who has been admitted separately to the School of Law and to the M.Acc. program may apply for permission to study concurrently for both the Juris Doctor and Master of Accountancy degrees. This permission must be requested from both the School of Law and the School of Accountancy, ordinarily prior to entry into the second year curriculum of the School of Law.

During the first academic year of concurrent work on the two degrees, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Accountancy program. A student registered for both law and graduate courses in the same term must enroll for a minimum of 10 hours in law, and 12 semester hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

Completion of the concurrent program requires that the student successfully complete 81 semester hours of law courses and 30 semester hours of courses that meet M.Acc. requirements. Up to 9 semester hours of the 30 may be School of Law courses which are also part of the 81 hours required for the Juris Doctor degree. School of Law courses counting for graduate credit toward the Master of Accountancy degree must be approved by the director of the Master of Accountancy program. Further, no more than 6 of the 30 semester credit hours may be taken in courses at the 400 level for graduate credit.

Online MAcc Program (38 credit hours, 24 months)

This option is for those students who are working professionals and need an advanced degree. The students need to meet all the foundation requirements for the residential MAcc, must be admitted to the Graduate School and complete an application to the College of Business Online Master Program available through the Online Master's Degree website at <http://online.business.siuc.edu>. Once admitted students will be provided an online advisor to guide them through the program. This is a cohort program and students are required to complete all courses specified over a 24 month period. Students are awarded the MAcc degree with a concentration in Taxation upon satisfactory completion of all requirements. Students enrolled in the Online Masters of Accountancy program will complete the entire program via the internet. Descriptions of the individual courses below may be found in the Course Description section.

Requirements for Online Macc Program- Taxation Concentration:

TAXATION STUDIES (24 HOURS)

ACCT 541 (3) Federal Income Tax Concepts
ACCT 542 (3) Tax Research and Procedure
ACCT 543 (3) Corporate Taxation

ACCT 544 (3) Partnership Taxation
ACCT 545 (3) State and Local Taxation
ACCT 546 (3) Estate and Gift Tax
ACCT 547 (3) Tax Accounting Principles
ACCT 548 (3) International and Interstate Taxation

ACCOUNTANCY STUDIES (6 HOURS)

ACCT 569 (3) Selected Audit/Systems Topics
BA 514 (3) Ethics of Business

GENERAL ELECTIVES (8 HOURS)

BA 546 (2) Critical Issues for Business Leaders
BA 570 (2) Advanced Seminar in Leadership Development
BA 591 (4) Seminar on Career Effectiveness

For Program schedule visit the College of Business Online Master's Degree Programs website at:
<http://online.business.siuc.edu>.

Double Major Policy

Any graduate student wishing to pursue a double major for a master's degree that includes business administration must satisfy the following requirements in addition to any requirements stated in the Graduate Catalog.

- The individual must satisfy all requirements for admission to the relevant master's program in business (M.B.A or M.Acc.).
- The individual must satisfy all foundation requirements of the relevant master's program in business.
- The individual must complete all core classes, secondary core (M.Acc.) courses, and elective course requirements for the relevant master's program in business.
- No more than six hours of coursework outside the College of Business and Administration may be counted toward elective requirements in the relevant master's program in business.

Courses (ACCT)

411-3 Enterprise Networks and Communication. (Same as Management 411.) Application of data communications and network technologies for improving business. Coverage includes, but is not limited to: introduction to the principles of data transmission technology, various communication architectures and protocols, basic networks design principles, internet and intranet technologies, data security issues and elements of network management. Prerequisite: a grade of B or higher in CS 200B or, IMS 229.

421-3 Advanced Accounting. Accounting principles and procedures relating to specialized topics, including partnership equity, installment and consignment sales, fiduciaries, international operations, branches, and business combinations. Prerequisite: ; a grade of C or better in ACCT 322. Restrictions: Accounting majors or minors, junior standing or higher.

431-3 Advanced Cost Accounting. Managerial decision making; profit planning and control through relevant cost-

ing, return on investment and transfer pricing, determination of cost behavior patterns, analysis of variances, capital budgeting, inventory models, probabilities, statistical methods, and operations research. Prerequisite: ACCT 331 with grade of C or better. Restrictions: Accounting majors or minors, junior standing or higher.

441-3 Advanced Tax. Study of income tax problems which arise from sole proprietorship, partnership, limited liability company, corporation, estate, and trust. Student does research in source materials in arriving at solutions of complicated problems. Prerequisite: ACCT 341 with grade of C or better. Restrictions: Accounting majors or minors; junior standing or higher.

460-3 Auditing. Standards, objectives and procedures involved in examining and reporting on financial statements of business organizations. Graduate students may only take this course if they have a deficiency. Prerequisite:

grade of C or better in ACCT 322. Restrictions: Accounting majors or minors; junior standing or higher.

465-3 Internal Auditing. The course covers internal audit from a broad perspective to include information technology, business processes, and accounting systems. Topics include internal auditing standards, risk assessment, governance, ethics, audit techniques, and emerging issues. It covers the design of business processes and the implementation of key control concepts and will use a case study approach that addresses tactical, strategic, systems, and operational areas. Restrictions: Accounting majors and minors.

512-3 to 18 (3 per topic) Accounting Research Methods Seminar. Describes and explains methods for examining research questions in a sub-discipline of accounting. Sections include (a) Auditing, (b) Financial accounting, (c) Managerial accounting, (d) International Accounting (e) Accounting information systems, (f) Taxation. May be repeated for credit but sections (a) through (f) can be taken only once.

521-3 Emerging Issues in Accountancy. Identifies developing areas in financial accounting and forces students to research the issues, to think critically, evaluate alternatives and communicate conclusions in oral and written form. International accounting, not-for-profit, standard setting and regulation, and other developing issues are addressed. *The Journal of Accountancy*, other professional journals, and guest speakers. Prerequisite: ACCT 321, ACCT 322.

532-3 Advanced Management Accounting. Management planning and control decisions and design and evaluation of management accounting systems requiring formal models and application of vigorous analytic reasoning. Integration and synthesis of techniques such as regression analysis, linear programming, decision theory and behavioral science for important decisions of the firm. Information economics. Contemporary research directories. Restrictions: enrollment in M.Acc. or M.B.A. program.

541-3 Tax Concepts. Provides the student with an understanding of the nature of the federal tax law and an appreciation of the law's impact upon business decisions both for individuals and companies. Prerequisite: ACCT 441 with C or better.

542-3 Tax Research and Procedure. Provides the student with a working knowledge of the tax practitioner's methodology applied to the solution of both routine and complex tax problems. Prerequisite: 441 with C or better.

543-3 Corporate Taxation. Provides students with in-depth exposure to federal income taxation of corporations and shareholders. Areas explored are corporate formations, distributions, redemptions, liquidations, subchapter S election, corporate income tax, accumulated earnings tax, personal holding company tax and affiliated corporations. Prerequisite: 441 with C or better.

544-3 Partnership Taxation. Provides students with in-depth exposure to the federal income taxation of partnerships, partners and related LLCs and owners. Areas ex-

plored are the definition of a partnership, acquisition of an interest, basis of interest, tax accounting for partnership or LLC operation, distributions, termination, sale or exchange of interest, collapsible partnerships, death or retirement and tax shelters. Prerequisite: ACCT 441 with C or better.

545-3 State and Local Taxation. This course will focus on the legislative and judicial evolution of the present tax systems. Basic concepts of state and local taxation, such as jurisdiction, commerce clause restrictions, uniformity, apportionment and taxation of e-commerce, will be examined. One of the primary objectives of this class is to ensure that students are familiar with the myriad of U.S. Supreme Court decisions delineating the taxing authority of state and local government entities in relation to the commerce, due process, equal protection and supremacy clauses of the U.S. Constitution. Students will also learn to interpret and analyze complex court decisions. Restrictions: enrollment in the M.Acc. or M.B.A. program.

546-3 Estate and Gift Taxation. Provide basic principles of federal estate and gift taxation. Prerequisite: ACCT 441 with C or better.

547-3 Tax Accounting Principles. Provides linkage of accounting skills with tax knowledge through identification of significant differences between tax and financial accounting and selection of tax accounting principles having a significant impact on cash flows. Tax accounting problems for industrial, wholesale and retail companies. Prerequisite: ACCT 441 with C or better.

548-3 International and Interstate Taxation. Examination of tax issues when taxable events or transactions cross international or state borders. Use of transfer pricing for international taxation purposes. Specific international taxation problems of foreign persons, U.S. citizens living abroad, U.S. shareholders of foreign corporations and problems related to multinational corporations. Also will examine issues of nexus and other principles guiding state taxation of persons and businesses involved in interstate commerce. Prerequisite: ACCT 5441 with C or better.

560-3 Information Technology Risk and Controls. Explains how organizations govern their investment in IT through strategic alignment, risk assessment, and performance measurement. Describes processes for evaluating and monitoring the effectiveness of IT general controls related to processing operations, system security, and change management. Prerequisite: ACCT 360. Restriction: enrollment as a graduate student.

563-3 Advanced Auditing. Explains how auditors evaluate business risk, fraud risk, inherent risk, and control risk to assess the risk of misstatement in accounts while planning an audit engagement. Examines analytical procedures, the code of professional conduct, auditor reporting requirements, and auditor legal liability. Prerequisite: ACCT 460. Restriction: enrollment as a graduate student.

564-3 Enterprise Systems. Enterprise Systems (ERP systems) and technologies have become prevalent in many companies. This course will examine the technical overview of Enterprise Systems and their impact on organiza-

tions. The concepts, fundamentals and framework of the advanced systems will be explored to better understand the integration of Enterprise Systems in an organization. A better understanding of Enterprise Systems and its affect on an organization will be gained. Restriction: enrollment in the M.Acc. or M.B.A. programs.

565-3 Advanced Accounting Information Systems. Advanced study in the systems that are used in companies especially database. Students will not be successful as auditors or internal accountants without database skills. The course would include advanced design issues, advanced query and data analysis skills (for internal and external purposes), db controls, db technology, etc. Prerequisite: ACCT 360.

566-3 Accounting Research. This course will provide research skills that are critical in Accounting. Students will identify a research topic, develop the research questions, conduct the research, and prepare a research document. The student will be exposed to how research is conducted and will develop the necessary skills to perform accounting research.

567-3 Fraud Examination. Fraud examination will cover the principles and methodology of fraud detection and deterrence. The course includes such topics as skimming, cash larceny, check tampering, register disbursement schemes, billing schemes, payroll and expense reimbursement schemes, non-cash misappropriations, corruption, accounting principles and fraud, fraudulent financial statements, and interviewing witnesses.

569-3 Seminar - Selected Audit/Systems Topics. Provides students with in-depth exposure to audit and/or accounting systems as it relates to selected topics. Topics will vary from semester depending upon instructor and topics of current interest to the accounting discipline.

571-3 Governmental and Not for Profit Needs. Financial and managerial accounting concepts peculiar to the planning and administration of public and quasi-public organizations such as governmental units, institutions, and charitable organizations. Also includes the study of governmental auditing standards. Prerequisite: ACCT 321 with a grade of *C* or better.

591-1 to 6 Independent Study. Directed independent study in selected areas of accountancy. Restriction: enrollment in M.Acc. Program.

595-3 Internship. Supervised work experience in professional accounting. Prerequisite: outstanding record in accounting and recommendation of the department committee on internship. Graded *S/U* only.

599-3 to 6 Thesis. Restriction: enrollment in M.Acc. Program.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

ADMINISTRATION OF JUSTICE

(See Criminology and Criminal Justice for program description.)

ADVANCED ENERGY AND FUELS MANAGEMENT

GRADUATE SCHOOL, COLLEGES OF AGRICULTURAL SCIENCES, BUSINESS, ENGINEERING, LIBERAL ARTS, AND SCIENCE

Advanced Energy and Fuels Management Faculty

Please see departmental web pages for detailed information on the research activities of individual faculty members. Please see also departmental entries in this catalog.

Achenbach, Laurie, *Microbiology*
 Altman, Ira, *Agribusiness Economics*
 Anderson, Kenneth, *Geology*
 Daneshdoost, Morteza, *Electrical and Computer Engineering*
 DeRuntz, Bruce, *Engineering Technology*
 Eberle, Phillip, *Agribusiness Economics*
 Haddock, John, *Microbiology*
 Kraft, Steven, *Agribusiness Economics*
 Lant, Christopher, *Geography and Environmental Resources*
 Lightfoot, David, *Plant, Soil, and Agricultural Systems*

Marzolf, John, *Geology*
 Mathias, James, *Mechanical Engineering and Energy Processes*
 Michalisin, Michael, *Management*
 Mondal, Kanchan, *Mechanical Engineering and Energy Processes*
 Nelson, Reed, *Management*
 Pearson, John, *Management*
 Secchi, Sylvia, *Agribusiness Economics*
 Wiltowski, Tomasz, *Mechanical Engineering and Energy Processes*

The Professional Science Masters in Advanced Energy and Fuels Management (PSM) is a 36-hour post-graduate degree that combines graduate level technical training in energy resources and technology with business skill development programs. This intensive program is designed to prepare graduates for leadership positions in the energy industry. The program includes nine (9) business-related credit hours, twelve (12) science/technology-related credit hours, three (3) credit hours of energy policy studies, six (6) credit hours of graduate level electives, and a six (6) hour capstone internship completed with an industrial partner.

Program Description

Societal and economic pressure to reduce reliance on imported resources and diversify energy supply options has resulted in the emergence of new industries and diversification of existing industries in the energy sector. The rapid growth of these industries has created a strong demand for personnel trained in both technical aspects of the energy industry and also in business, to take management and leadership roles. The overarching academic objective of the Professional Science Master's (PSM) in Advanced Energy and Fuels Management is to satisfy this need by providing high quality professional training that ensures that graduates have acquired the diverse skill set sought and demanded by industry.

The proposed course of study is designed to achieve this objective by providing core technical training covering energy resources, energy production technology and

energy policy issues, coupled with business training in project and personnel management, business leadership skills and fiscal management. In addition to these core requirements, students participating in this program will have the opportunity to take six (6) credit hours of science/technology electives to allow them to gain additional specialized graduate level training related to their own specific interests and career goals.

The proposed program consists of a 36-hour program of study, structured in accord with the PSM model originally developed by the Sloan Foundation. The program is designed to be completed in one academic year (based on full time study), with additional course work to be completed in the preceding summer semester and the capstone internship to be completed in the final summer semester. This intensive program is designed to minimize the time students would need to be away from full-time employment while maintaining academic rigor.

This program includes business, science/technology and policy elements, broken down as follows and is designed to provide the diverse skill set demanded by industry.

- 9 Business-related credit hours
- 12 Science/technology-related credit hours
- 3 Credit hours of energy policy studies
- 6 Credit hours of electives
- A capstone 6 credit hour internship in industry completed over the summer semester following completion of other requirements

The program is composed of the following existing and proposed courses. All specified courses are required (core) curriculum elements. A preliminary list of science/technology electives is included, but this list is not all inclusive. Several academic units indicated their intention to develop courses that would be suitable as science electives for participants in this program. In addition, courses outside the sciences have included in this list for students who may wish to take additional supplemental coursework.

Summer Semester (6 Hours)

GEOL 588-3 Global Energy Resources

BA 540-3 Managerial & Organizational Behavior

Fall Semester (12 hours)

PSAS 433-3 Introduction to Agricultural Biotechnology

Or MBMB 421-3 Biotechnology

ABE 442-3 Energy Economics & Policy

BA 510-3 Managerial Accounting & Control Concepts

Elective (3 hrs.)

Spring Semester (12 hours)

BA 5xx *New Course; TBD* Project Management (3hrs.)

ME 568 Alternative Fuel & Energy (3 hrs.)

GEOL 420-3 Petroleum Geology or

GEOL 421-3 Organic Geochemistry

Elective (3hrs)

Summer Session (6 hours)

Internship (6 hrs.) This internship will require the student to complete a specified project for the employer supporting the internship, the nature of which will be approved by PSM faculty in consultation with the employer prior to the initiation of the project. A project report, including both written and oral

components to both the employer and to PSM faculty, is required.

Program Admission and Graduate Requirements.

An admission committee, composed of the program director and members of the faculty advisory board, will oversee admission of candidates to the program. Preferred candidates are individuals who hold a baccalaureate degree in natural sciences, physical sciences or engineering. Candidates not holding an appropriate baccalaureate degree may be required to complete necessary prerequisite courses prior to admission to the program. Courses that are taught exclusively for PSM students will not have prerequisite requirements as they will be designed specifically for PSM students. Catalog course descriptions for elective courses indicate the nature of any prerequisites or consent of instructor. Academic exceptions may be granted in exceptional circumstances for individuals with extensive professional experience or other background that, in the opinion of the admissions committee, qualifies the candidate for admission.

- SIUC's graduate school admission requirements are available at:

<http://www.siu.edu/gradschool.siu.edu/catalog/DegreeRequirements.pdf>

Graduation requirements are successful completion of all course work and the capstone internship, with an overall GPA ≥ 3.0 . Completion of the Graduate Record Examination (GRE) is preferred.

- SIUC's graduate school graduation requirements are available at:

<http://www.siu.edu/gradschool.siu.edu/catalog/DegreeRequirements.pdf>

CORE COURSES:

ABE 442, Energy Economics & Policy

Economic principles and methods are used to examine economic and policy issues relevant to energy production and use. Topics include: key aspects of energy supply, demand, markets, and regulation; environmental externalities of fuel production and use; the relationships among energy use, economic growth and the environment; alternative energy sources.

BA 510, Managerial Accounting & Control Concepts

Basic cost concepts, measures, methods and systems of internal accounting useful for managerial planning, implementation, control and performance evaluation. Includes cost analysis relevant for non-routine decision-making. Prerequisite: enrollment in College of Business and Administration graduate program or consent of department, 410 and M.B.A. program "computer ability" foundation requirement met, or equivalent.

BA 540, Managerial & Organizational Behavior

Case analysis of human problems in the business organization. Application of findings of behavioral science research to organization problems. Development of direction and leadership skills. Prerequisite: enrollment in College of Business and Administration graduate program or consent of department, 440 or equivalent.

BA 5xx, Project Management (TBD)

Projects and project teams characterize today's workplace and the project manager is considered the linchpin. This course provides exposure to project management related knowledge, tools, techniques, and skills while focusing on effective project planning and management. Relevant cases and software will be part of the pedagogy in delivering this course.

GEOL 420, Petroleum Geology

The geological occurrences of petroleum including origin, migration and accumulation; a survey of exploration

methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 224.

GEOL 421, Organic Geochemistry

The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: 325 or consent of instructor.

GEOL 588-3 Global Energy Resources.

Ready access to energy is essential to sustaining modern societies. This course will discuss the nature of the resources that have been, are, or potentially could be used to provide energy in the US and around the globe, including fossil fuels, nuclear energy resources, bioenergy resources and emerging energy resources such as geothermal, wind, tidal, and solar energy

MBMB 421, Biotechnology

(Same as Microbiology 421.) Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Prerequisite: Microbiology 302, or consent of instructor.

ME 568, Alternative Fuel & Energy

The course covers the alternatives for energy resources and the impact of the human growth on the energy usage and its environmental consequences. The course describes the fossil fuel era, renewable energy resources, and hydrogen fuel era. The fundamentals of each of these fuel types, their conversion to usable energy and the potential of each of these fuels for the future are discussed. Prerequisite: ENG 300 and ME 410, or instructor's consent.

PSAS 433, Introduction to Agricultural Biotechnology

(Same as Animal Science 433 and Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: restricted to departmental approval.

ELECTIVES:

ABE 440 Natural & Environmental Resource Economics & Policy

Student will study the application of socioeconomic principles to problems related to natural and environmental resources. The course covers the policy context within which policies related to natural and environmental resources are developed and implemented as well as the

range of policy tools available for addressing environmental/natural resource problems. The institutional setting for dealing with natural and environmental resources is presented along with the role of property rights and entitlements. Contemporary resource problems are used as examples.

ABE 453, Agribusiness Planning Techniques

Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results.

BA 503, Management of Change

The methods and processes of planned change are examined. Special emphasis is placed on the design and implementation of continuous improvement systems and related issues of managing constant change. Change models are viewed in the context of international competitiveness and a dynamic global environment. Prerequisite: enrollment in the College of Business and Administration or consent of department.

BA 530, Financial Management

Provide a broad overview of basic concepts, principles, and recent innovations in financial management. Topics covered will include risk and return, valuation, capital budgeting, capital structure and cost of capital, dividend policy, financial planning, international financial management and corporate restructuring. Prerequisite: enrollment in the College of Business and Administration graduate program or consent of the department, 510 and economics foundation requirement, Finance 330 with a grade of C or better.

BA 550, Marketing Management

A managerial approach to the study of marketing. Emphasis is on the nature and scope of the marketing manager's responsibilities and on marketing decision-making. Prerequisite: enrollment in the College of Business and Administration or consent of the department.

ERP 501, Economic Systems & Environmental Change

Investigation of the social forces driving natural resource use and environmental change, including population growth, the globalization and migration of economic activity, changing land use patterns, and economic and technological trends in the major resource use sections; energy, agriculture, water, and forestry. Principles of environmental impact assessment, ecological footprint analysis and industrial ecology are introduced. The challenge of sustainable development sets the state for an analysis of the future adequacy of the natural resources based on which societies and economics depend. Prerequisite: 500

ERP 502, Environmental Decision Making

Analytical concepts relevant for environmental professional will be taught and demonstrated through case studies. Topics to be covered include risk assessment and risk

management formulation of environmental impact statements, cost effectiveness and cost benefit analysis, and methods of conflict resolution. The role of economic incentives in encouraging conservation, the role of multiple institutional players environmental decision-making at various geographic scales (local, state, international, global), and the use of the Internet as a source of environmental information will be emphasized.

ME 408, Energy Conversion Systems

Principles of advanced energy conversion systems, nuclear power plants, combined cycles, magnetohydrodynamics, cogeneration (electricity and process steam) and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects and economics. Prerequisite: 301 or 400.

ME 435, Design of Mass Transfer Processes

Design principles of mass transfer processes. The rate mechanism of molecular, convective and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water cooling, drying and distillation. Prerequisite: 302.

ME 446-3 Energy Management.

Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: 302.

ME 5xx, Catalysis in Energy Processes

The course will provide a broad introduction to scientific and engineering concepts associated with heterogeneous catalysis and its application in modern energy processes. Topics covered in the course will include introduction to heterogeneous catalysis, steam reforming processes, synthesis gas production and reaction, water gas shift reaction, hydrogen production and storage, methanol and ethanol production, hydrogen fuel cells, and Fischer Tropsch synthesis. Prerequisite: Senior standing or consent of instructor.

Advanced Energy and Fuels Management Courses (AEFM)**AEFM 585-6 Internship in Advanced Energy & Fuels Management**

Supervised work experience with a public or private agency or firm through which students acquire practical, professional training to complement their course work in effective analysis, synthesis and management of energy processes and fuels as well as in efficiency relating to clean fuel technologies and energy policies relevant to the energy sector. Restricted to enrollment in AEFM. Graded S/U only.

AEFM 601-1 (per semester) Continuing Enrollment

For those graduate students who have not finished their degree programs and who are in the process of working on and completing their internship reports. The student must have completed a minimum of 30 hours of course work before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

AGRIBUSINESS ECONOMICS

www.agribusiness.siu.edu
agecon@siu.edu

COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

Altman, Ira J., Assistant Professor, Ph.D., University of Missouri, 2005; 2006.

Beaulieu, Jeffrey R., Associate Professor and *Interim Chair*, Ph.D., Iowa State University, 1984; 1983.

Beck, Roger J., Associate Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1977; 1984.

Eberle, Phillip R., Associate Professor, Ph.D., Iowa State University, 1983; 1983.

Harris, Kim S., Associate Professor, Ph.D., University of Illinois, 1985; 1984.

Herr, William M., Professor, *Emeritus*, Ph.D., Cornell University, 1954; 1957.

Keeper, Wendell E., Professor, *Emeritus*, Ph.D., Cornell University, 1938; 1950.

Kraft, Steven E., Professor, *Emeritus*, Ph.D., Cornell University, 1976; 1980.

Moon, Wanki, Assistant Professor, Ph.D., University of Florida, 1995; 2000.

Rendleman, C. Matthew, Associate Professor, Ph.D., Purdue University, 1989; 1994.

Sanders, Dwight R., Professor, Ph.D., University of Illinois, 1999; 2000.

Secchi, Silvia, Assistant Professor, Ph.D., Iowa State University, 2000; 2008.

The Department of Agribusiness Economics (ABE) offers graduate work leading to the Master of Science degree with a major in agribusiness economics. A program of concurrent study leading to the award of two master's degrees, the Master of Business Administration and Master of Science with a major in agribusiness economics can be undertaken. An interdisciplinary degree at the Master of Science level may be achieved by completing requirements as a double degree major.

Graduate students with a minimal undergraduate grade point average of 2.7 (4.0 scale) and demonstrated competence in economics, statistics, mathematics, and agricultural economics are admitted on an unconditional basis to the ABE Master of Science degree programs. Students with insufficient background may be admitted contingent upon demonstration of satisfactory completion of undergraduate courses in deficient areas.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Agribusiness Economics. Applicants may pay this fee by credit card, personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Inquiries should be directed to the chair of the Department of Agribusiness Economics, Ag Bulding, Room 226, Mail Code 4410, 1205 Lincoln Drive, Southern Illinois University Carbondale, Carbondale, IL 62901-4410.

Agribusiness Economics Concentration

Through selected coursework and research students may specialize in resource and environmental economics, economic and rural development, agribusiness management and finance, agricultural marketing and prices, farm production management, and international trade and agricultural policy.

The Master of Science degree major in agribusiness economics with a concentration in agribusiness economics

is awarded upon completion of required coursework with a minimum graduate grade point average of 3.0 (4.0 scale) in either of two options; a thesis or a non-thesis (research paper) option. For both options at least 15 hours must be at the 500 level.

The thesis option requires satisfactory completion of thirty hours of graduate credit. This includes thirteen hours in structured agribusiness economics courses; ABE 500a, 500b, 551, 552, and 581. Eleven hours of elective graduate credit are selected based upon recommendation from the agribusiness faculty member directing the student's thesis work. A research component including six hours of ABE 599 and an oral examination is required.

The non-thesis option requires satisfactory completion of thirty-six hours of graduate credit. This includes thirteen hours in structured agribusiness economics courses; ABE 500a, 500b, 551, 552, and 581. Twenty-one hours of elective graduate credit are selected based upon recommendation from the agribusiness faculty member acting as the student's research paper advisor. Six of these elective hours are selected from structured agribusiness economics courses offered at the 400 level. A research component including two hours of ABE 593 and an oral presentation of the student's research paper is required.

Agricultural Services Concentration

The agricultural services concentration is designed to permit individuals who are professionals in private industry or public service to earn a Master of Science degree with a major in agribusiness economics while remaining fully employed in the agricultural sector.

A minimum of 30 hours of graduate credit, including a thesis, or 36 hours of graduate credit, including a research paper, is required for the Master of Science degree major in agribusiness economics with a concentration in agricultural services. At least 15 hours must be at the 500 level. Fifteen hours must be agricultural courses. The

research component for the thesis and non-thesis options are as specified for the Agribusiness Economics Concentration.

M.B.A./M.S. in Agribusiness Economics Concurrent Degree Program

The Department of Agribusiness Economics (ABE) and the College of Business and Administration together offer an M.B.A./ABE M.S., a concurrent degree program leading to both the Master of Business Administration and the Master of Science with a major in agribusiness economics. The separate M.B.A. degree requires completion of 32 semester hours of coursework; the M.S. with a major in ABE requires the completion of 30 semester hours (thesis option) or 36 hours (non-thesis option). In the concurrent M.B.A./M.S. degree program, the College of Business and Administration accepts six semester hours of ABE approved coursework, and ABE accepts six semester hours of College of Business and Administration approved coursework. The end result is that the concurrent degree requires completion of 26 semester hours of College of Business and Administration approved courses and 24 semester hours of ABE approved courses (thesis option) or 30 semester hours of ABE approved courses including a minimum of 6 semester hours of ABE courses at the 400

level (non-thesis option), or a decrease of 12 semester hours from pursuing both degrees separately.

The ABE M.S. as a part of this option requires satisfactory completion of ABE 500a, 500b, 551, 552, and 581 and additional elective hours. A research component of a thesis (thesis option) or research paper (non-thesis option) as specified for the Agribusiness Economics Concentration must be completed for award of the ABE M.S.

Students interested in enrolling in the concurrent M.B.A./ABE M.S. program must apply to and be accepted by both the graduate programs in the ABE Department and the College of Business and Administration. The student then may request permission to pursue the concurrent degree. Students enrolled in either the M.B.A. or ABE M.S. may subsequently seek permission to pursue the concurrent degree. Admission to the concurrent degree must be completed at least one semester before the last semester of registration at SIUC. The student must complete the requirements of the concurrent degree program to receive both the M.B.A. and ABE M.S. If the student elects, after acceptance into the concurrent degree program, to pursue either, but not both, the M.B.A. or ABE M.S., all requirements of the individual degree program must be satisfied.

Courses (ABE)

Field trips are required for certain courses.

401-3 Agricultural Law. Relations of common-law principles and statutory law to land tenure, farm tenancy, farm labor, farm management, taxation and other problems involving agriculture. Restricted to junior standing or consent of instructor.

402-1 to 6 Problems in Agribusiness Economics. Designed to improve the techniques of agribusiness economics workers through discussion, assignment, and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. Special approval needed from the chair.

405-3 Management of Ethanol Production Facilities. This course is offered in cooperation with the National Corn-to-Ethanol Laboratory and provides a comprehensive introduction to the management and operation of an ethanol facility as well as overview of today's bio-fuels industry. Topics include: ethanol industry trends and bio-fuels future, corn- to-ethanol production processes, operations control and management, products and co-products, and environmental topics.

440-3 Natural and Environmental Resource Economics and Policy. Student will study the application of socioeconomic principles to problems related to natural and environmental resources. The course covers the policy context within which policies related to natural and environmental resources are developed and implemented

as well as the range of policy tools available for addressing environmental/natural resource problems. The institutional setting for dealing with natural and environmental resources is presented along with the role of property rights and entitlements. Contemporary resource problems are used as examples. Prerequisite: six hours of agribusiness economics, economics, or geography; graduate status; or consent of instructor.

442-3 Energy Economics and Policy, Economic principles and methods are used to examine economic and policy issues relevant to energy production and use. Topics include: key aspects of energy supply, demand, markets, and regulation; environmental externalities of fuel production and use; the relationships among energy use, economic growth and the environment; alternative energy sources. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

444-3 Agricultural Development. Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Prerequisite: 6 hours of agribusiness or general economics, geography, or consent of instructor.

445-3 Methods of Regional Economic Analysis

Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor.

450-3 Advanced Farm Management. Application of production economic principles and modern decision-making techniques to farm management problems. The importance of information, sources of agricultural risk and management of risk in farm planning will be integrated. Prerequisite: ABE 350 or equivalent and University Core Curriculum mathematics required.

451-3 Appraisal of Rural Property. Principles and practices of rural and farm appraisal. Applications of sales comparison, income capitalization and cost approaches for estimating market value. Consequences of environmental liabilities and regulations on appraisal practices. Understanding of special valuation methods for buildings, insurance, assessments, loans and condemnations. Field trips not to exceed \$10. Prerequisite: 350 or consent of instructor.

452-3 Advanced Agricultural Financial Management. Focus is on using the financial accounting system recommended by the Farm Financial Standards Council as a base for evaluating the financial performance of farms and agribusinesses. Ratio analysis and DuPont Modeling emphasized. Additional focus on credit markets serving farms and agribusinesses with an emphasis on the Farm Credit System and its affiliated Agricultural Credit Associations. Prerequisite: ABE 351.

453-3 Agribusiness Planning Techniques. Application of mathematical programming to agribusiness and farm planning, including enterprise selection, resource allocation, least cost ration formulation, decision making under risk and uncertainty, transportation and location problems. Emphasis placed on modeling problems and interpretation of results. Restricted to junior standing or consent of instructor.

460-3 Agricultural Price Analysis and Forecasting. The focus is on the measurement and interpretation of factors affecting agricultural prices. Methods to analyze the seasonal, cyclical, and trend components of commodity prices are presented. Formal forecasting techniques, including an introduction to statistical and regression methods, are used and explained. Emphasis is placed on the presentation, communication, and evaluation of forecasts in a business environment. Students are given an opportunity to perform applied analysis and present the results. Prerequisite: 318, 362 or equivalent.

461-3 Agriculture Business Management. Examination of agribusiness firm management with emphasis on the management and control of financial resources and the interrelationship between the agribusiness firm and human

resource management. Other topics in agribusiness will include effective communication in the management process, business ethics and workable credit programs for customers. Prerequisite: 351 and 360 or equivalent.

462-3 Advanced Agricultural Marketing. Advanced treatment of marketing issues from both theoretical and practical decision-making perspectives. Marketing margins, intertemporal and spatial price relationships are reviewed in detail. Historical and current grain and livestock price series are utilized in decision-making exercises. Prerequisite: 362 or equivalent.

463-3 Managerial Strategies for Agribusiness. Application of Industrial Organization and Strategic Management (Competitive Strategy) principles to address economic and managerial issues related to agriculture and food industries. Particular emphasis on applying those principles to explain structural changes taking place in the agriculture and food supply chain in the United States. Prerequisite: 204, 350 or 360, Economics 240.

500-6 (3,3) Agribusiness Economics Research Methodology. (a) Social science research methodology in agriculture, including defining research problems, hypothesis formation, specification of research design, survey methodology, source of data and development of research proposals. (b) A survey of applied techniques and procedures for developing and evaluating agricultural economic research models with an emphasis on multiple regression and time-series models. Prerequisite: Educational Psychology 506 or equivalent.

544-3 Agricultural Development Students are introduced to economic growth and development theory at an intermediate level. Topics include trends in development in North America and study of theories. The economic theories covered address how growth occurs in developed economies including classical and neoclassical, central place and endogenous growth theories among others. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor.

545-3 Methods of Regional Economic Analysis Students are introduced to regional economic methods at an intermediate level. Students will learn concepts and tools commonly used in regional and community economic analysis. Students will learn to use regional input-output analysis and more technical regional economic models designed to capture spatial economic variables. Prerequisites: 6 hours of agribusiness or general economics, geography, or consent of instructor.

551-3 Resource Allocation in the Agribusiness Firm. An examination of resource allocation in the agribusiness firm. Production decisions, agricultural product price analysis and decision making models are considered. Prerequisite: six hours of agricultural economics or economics or consent of instructor.

552-3 Problems and Policies of the Agricultural Sector. An analytical survey of agricultural policy issues including agricultural price and income stabilization; international trade, capital and credit, the structure of agriculture and the

quality of life in rural areas. Prerequisite: six hours of agricultural economics or economics or consent of instructor.

581-1 to 4 Seminar in Agribusiness Economics. Seminar on current research and issues in agribusiness economics on topics such as farm management, farm policy, agricultural marketing, farm finance, agricultural prices and international agriculture.

585-1 to 6 Practicum/Internship. Supervised work experience at the graduate level with a public or private agency or firm through which a graduate student can acquire practical professional training to complement their academic course work and research.

588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of program and the number of semester hours of credit.

590-1 to 4 Readings. Readings in specialized topics under the direction of an approved graduate faculty member. Graded *S/U* only.

593-1 to 4 Individual Research. Directed research in selected topics under the supervision of an approved graduate faculty member. Graded *S/U* only.

599-1 to 6 Thesis. Work in the research for and presentation of a thesis under the supervision of an approved faculty member. Graded *S/U* only.

601-1 (per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

AGRICULTURAL SCIENCES

[www.coas.siu.edu/
jpreece@siu.edu](http://www.coas.siu.edu/jpreece@siu.edu)

COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

- AbuGhazaleh, Amer A., Assistant Professor, Ph.D., South Dakota State University, 2002; 2004
- Altman, Ira J., Assistant Professor, Ph.D., University of Missouri, 2005; 2006.
- Apgar, Gary A., Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 1994; 1998.
- Arthur, Robert, Professor, *Emeritus*, Ph.D., University of Missouri, 1970; 1977.
- Ashraf, Hea-Ran L., Professor, *Emerita*, Ph.D., Iowa State University, 1979; 1980.
- Atkinson, Rebecca L., Assistant Professor, Ph.D., University of Wyoming, 2006; 2006.
- Aubertin, Gerald M., Associate Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1964; 1976.
- Banz, William J., Professor, Ph.D., University of Tennessee, 1995; 1995
- Beaulieu, Jeffrey R., Associate Professor, Ph.D., Iowa State University, 1984; 1983.
- Beck, Roger J., Associate Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1977; 1984.
- Bond, Jason P., Associate Professor, Ph.D., Louisiana State University, 1999; 2000.
- Budelsky, Carl A., Assistant Professor, *Emeritus*, Ph.D., University of Arizona 1969; 1967.
- Burde, John H. II, Professor, *Emeritus*, Ph.D., University of Arizona, 1974; 1974.
- Carver, Andrew, Associate Professor, Ph.D., Purdue University, 1998; 1998.
- Chilman, Kenneth C., Associate Professor, *Emeritus*, Ph.D., University of Michigan, 1972; 1973.
- Chong, She-Kong, Professor, *Emeritus*, Ph.D., University of Hawaii, 1979; 1979.
- Davenport, Mae A., Assistant Professor, Ph.D., University of Minnesota, 2003; 2004.
- Davis, Jeremy., Assistant Professor, Ph.D., Iowa State, 2008; 2008.
- Diesburg, Kenneth L., Assistant Professor, Ph.D., Iowa State University, 1987; 1989.
- Doerr, William A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1973; 1965.
- Eberle, Phillip R., Associate Professor, Ph.D., Iowa State University, 1983; 1983.
- Elkins, Donald M., Professor, *Emeritus*, Ph.D., Auburn University, 1967; 1967.
- Endres, Jeannette M., Professor, *Emerita*, Ph.D., St. Louis University, 1972; 1980.
- Fakhoury, Ahmad M., Assistant Professor, Ph.D., Purdue University, 2001; 2003.
- Fralish, James S., Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1970; 1969.
- Goodman, Bill L., Professor, *Emeritus*, Ph.D., Ohio State University, 1959; 1958.
- Groninger, John W., Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995; 1997.
- Harris, Kim S., Associate Professor, Ph.D., University of Illinois, 1985; 1984.
- Hausler, Carl L., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1970; 1970.
- Henry, Paul H., Associate Professor, Ph.D., North Carolina State University, 1991; 1992.
- Hernandez, Jorge D., Assistant Professor, Ph.D., Iowa State University, 2003; 2004.
- Herr, William McD., Professor, *Emeritus*, Ph.D., Cornell University, 1954; 1957.
- Hinners, Scott W., Professor, Ph.D., *Emeritus*, University of Illinois, 1958; 1951.
- Holzmueller, Eric J., Assistant Professor, Ph.D., University of Florida, 2006; 2007.
- Jones, Karen L., Associate Professor, Ph.D., Texas A&M, 1999; 1999. Animal biotechnology.
- Kammlade, W. G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951; 1954.
- Kantartzi, Stella, Assistant Professor, Ph.D., Aristotle University of Thessaloniki, 2006; 2008. Soybean breeding and genetics.
- Keeper, Wendell E., Professor, *Emeritus*, Ph.D., Cornell University, 1938; 1950.
- King, Sheryl S., Professor, Ph.D., University of California, Davis, 1983; 1983.
- Klubek, Brian P., Professor and *Chair*, Ph.D., Utah State University, 1977; 1978.
- Kraft, Steven E., Professor, *Emeritus*, Ph.D., Cornell University, 1976; 1980.
- Kroening, Gilbert H., Professor, *Emeritus*, Ph.D., Cornell University, 1965; 1969.
- Kung, Fan H., Professor, *Emeritus*, Ph.D., Michigan State University, 1968; 1970.
- Legacy, James, Professor, *Emeritus*, Ph.D., Cornell University, 1976; 1977.
- Lightfoot, David A., Professor, Ph.D., University of Leeds, 1984; 1991.
- Long, Sara, Professor, Ph.D., Southern Illinois University Carbondale, 1991; 1991
- McCurdy, Dwight R., Professor, *Emeritus*, Ph.D., Ohio State University, 1964; 1965.
- McGuire, James M., Professor, *Emeritus*, Ph.D., North Carolina State University, 1961; 1993.
- Meksem, Khalid, Associate Professor, Ph.D., University of Cologne, Germany, 1995; 2000.

Midden, Karen L., Professor, M.L.A., University of Georgia, 1983; 1988. Landscape design.

Minish, Gary L., Professor and Dean, Ph.D., Michigan State University, 1966; 2004.

Moon, Wanki, Associate Professor, Ph.D., University of Florida, 1995; 2000.

Myers, Oval, Jr., Professor, *Emeritus*, Ph.D., Cornell University, 1963; 1968.

Olsen, Farrel J., Professor, *Emeritus*, Ph.D., Rutgers University, 1961; 1971.

Olson, Howard H., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952; 1954

Pense, Seburn L., Assistant Professor, Ph.D., Oklahoma State University, 2002; 2003.

Peterson, Sharon L., Assistant Professor, Ph.D., Pennsylvania State University, 1996; 2006

Preece, John E., Professor, Ph.D., University of Minnesota, 1980; 1980. Horticultural physiologist.

Rendleman, C. Matthew, Associate Professor, Ph.D., Purdue University, 1989; 1994.

Roth, Paul L., Professor, *Emeritus*, Ph.D., Kansas State University, 1968; 1967.

Ruffner, Charles M., Associate Professor, Ph.D., Pennsylvania State University, 1999. 1999.

Sanders, Dwight R., Associate Professor and *Acting Chair*, Ph.D., University of Illinois, 1999; 2000.

Schmidt, Michael, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1994; 1979.

Schoonover, Jon E., Assistant Professor, Ph.D., Auburn University, 2005; 2006

Secchi, Silvia, Assistant Professor, Ph.D., Iowa State, 2000; 2008

Seekamp, Erin L., Assistant Professor, Ph.D. University of Idaho, 2006; 2007.

Shoup, W. David, Professor, Ph.D., Purdue University, 1980; 1999.

Smith, Sylvia F., Assistant Professor, Ph.D., University of Tennessee, 2007; 2007

Stitt, Thomas R., Professor, *Emeritus*, Ph.D., Ohio State University, 1967; 1967.

Strack, Louis E., Associate Professor, *Emeritus*, D.V.M., University of Illinois, 1961; 1968.

Stucky, Donald J., Professor, *Emeritus*, Ph.D., Purdue University, 1963; 1970.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982; 1982.

Tweedy, James A., Professor, *Emeritus*, Ph.D., Michigan State University, 1966; 1966.

Varsa, Edward C., Professor, *Emeritus*, Ph.D., Michigan State University, 1970; 1970.

Wakefield, Dexter B., Associate Professor, Ph.D., Purdue University, 2001; 2001.

Walters, S. Alan, Associate Professor, Ph.D., North Carolina State University, 1997, 1998.

Watson, Dennis, Associate Professor, Ph.D., Michigan State University, 1987; 2002.

Welch, Patricia, Professor, *Emerita*, Ph.D., Southern Illinois University, 1982; 1982.

Williard, Karl W. J., Associate Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Winters, Todd A., Professor and *Associate Dean for Research and Personel*, Ph.D., University of Wisconsin-Madison, 1992; 1994.

Wolff, Robert L., Professor, *Emeritus*, Ph.D., Louisiana State University, 1971; 1972.

Wood, Eugene S. Professor, *Emeritus*, Ed.D., University of Missouri, 1958; 1949.

Woody, Harold Dee, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1978; 1978.

Young, Anthony W., Professor, *Emeritus*, Ph.D., University of Kentucky, 1969; 1980.

Young, Bryan G., Professor, Ph.D., University of Illinois, 1998; 1998.

Zaczek, James J., Associate Professor and *Chair*, Ph.D., Pennsylvania State University, 1994; 1997.

Doctor of Philosophy in Agricultural Sciences

The College of Agricultural Sciences offers a graduate program leading to the Doctor of Philosophy degree. This degree is designed to provide students with an interdisciplinary doctoral education in the physical, biological and social sciences that enhances, regulates and sustains agriculture, food and forestry producers, industries and agencies. This degree will prepare Ph.D. graduates to teach and conduct research and outreach at universities and community colleges, and for careers in the corporate, private and government sectors.

Admission

All applications to the program must include a Graduate School On-Line Application available at www.siu.edu/gradschl, a statement of interest, college transcripts, three letters of recommendation, GRE scores

including verbal and quantitative, and may include a financial assistance form. In addition, this Program requires a non-refundable \$50 application fee. Criteria for admission include an official transcript or graduate dean's letter showing that a Master's degree was or is to be awarded, letters of recommendation, grade point average (must meet the SIUC Graduate School minimum 3.25 GPA in graduate work), and GRE scores. The Graduate Committee of the College must approve admission to the Ph.D. in Agricultural Sciences program. Ph.D. students will be selected on a national and international competitive basis.

Students must have a Master of Science or Master of Arts degree in Agriculture, a discipline within the SIUC College of Agricultural Sciences, or a closely related field (such as Biology, Botany, Natural Science, Rural Sociology, Economics, or Environmental Science).

Students with a Bachelor of Science or Bachelor of Arts degree may be admitted during their last semester of Master's studies conditional upon completion of their Master's degree.

Doctor of Philosophy Degree Program

Each doctoral student in the College of Agricultural Sciences must successfully complete a common core of research methodology courses, including a two semester sequence of graduate level statistics courses for 4-5 credit hours each, followed by a 3-4 credit hour graduate level experimental design course. Students also will be required to take a three-credit course in Research and Teaching Communications, two semesters of graduate seminar, and 24 hours of dissertation credits. There will be an additional minimum of 20 hours of structured courses appropriate for each student's area of emphasis. The student's graduate advisory committee must approve these courses.

All Ph.D. students in the program will be required to teach or assist in teaching at least two courses within the College of Agricultural Sciences while in the program. This requirement is regardless of the form of stipend of the student, i.e. if a student is on a research assistantship throughout their tenure in the program, they will still be required to teach or assist in teaching courses.

There is no minimal credit-hour requirement beyond the core, the area of emphasis, and the Graduate School's residency and dissertation requirements. A student in consultation with their major professor will prepare a program of study, including courses in the student's area of emphasis, by the end of the second semester of residency. This plan of study, when approved by the student's advisory committee, will be filed with the Director of Graduate Studies for the College.

Ph.D. Candidacy

By the end of the second semester in residence, students must have chosen an area of emphasis and formed a graduate advisory committee to approve their coursework and oversee their dissertation research. The graduate advisory committee will consist of at least five graduate faculty members, with the majority from within the College of Agricultural Sciences and no more than three members from one department. The committee chair will be the student's major professor and must be a member of the College of Agricultural Sciences faculty.

To be admitted to candidacy, the student must have completed the Graduate School's 24 credit hours residency requirement within four calendar years, plus the core and emphasis area coursework that was approved by their graduate advisory committee. This should take the student three to four semesters, depending on whether they had any graduate-level research methodology courses during their Master's degree. At this time, they will take both written and oral preliminary examinations designed and administered by the student's graduate advisory committee. These exams will each have two parts. One will focus on the student's knowledge of the research methodology core and the second part will focus on the student's chosen area of emphasis. If the preliminary examinations are not passed, a student must wait a minimum of three months for the second and final attempt to pass the exam.

After passing the written and oral preliminary exams and with an approved dissertation proposal, the student will be admitted to candidacy. The Graduate School requires that Ph.D. students fulfill all degree requirements within five years of admission to candidacy or they may have to retake their preliminary exams.

Dissertation and Dissertation Examination

By the beginning of the fifth semester of residence, the students will present to their graduate committee a dissertation research proposal. The student's committee must approve the proposal by the end of their fifth semester of residence. At this time, students must present their dissertation proposal verbally in the form of a graduate seminar. All faculty members in the College of Agricultural Sciences, the student's graduate advisory committee, all other graduate students in the College, and appropriate individuals from industry groups in southern Illinois will be invited to these seminars. Following the seminar, the student will meet with their graduate advisory committee and will be asked to defend the substance and methods of the proposed research.

The student's graduate advisory committee will monitor the student's progress on the dissertation. When the dissertation is completed to the satisfaction of the graduate advisory committee, the committee will administer a final oral exam that will focus on defense of the dissertation. When the dissertation and final oral exam are successfully completed, the student will be recommended to the Graduate School for the doctoral degree.

Courses (AGSC)

550-3 Research and Teaching Communications. This course is designed to teach graduate students how to communicate successfully their proposed and completed research and to teach college-level courses in the Agricultural Sciences.

581-1 to 4 (1,1,1) Seminar. Oral presentations by individual graduate students. Each Ph.D. student in Agricultural Sciences is required to present their proposed dissertation research project as a seminar and the findings of their dissertation as a seminar. All Agricultural Sciences Ph.D. students must register for at least two credits of seminar.

582-A-C (1-3, 1-3, 1-3) Colloquium in Agricultural Science. Recent developments in Agricultural Sciences will be discussed in a classroom setting; (a) Biological Science, (b) Social Sciences, and (c) Physical Sciences.

590-1 to 4 Graduate Readings in Agricultural Science. Journal articles, chapters and books relevant to a Ph.D. student's research will be read and discussed with their major professor.

591-1 to 4 Individual Research in Agricultural Science. Directed research in approved specialized topic areas in Agricultural Sciences.

592-1 to 4 Special Problems in Agricultural Science. Directed study of specialized areas of Agricultural Science, depending on the program of the student.

600-1 to 36 (1 to 12 per semester) Dissertation. This course is to be taken during the research and writing of the dissertation. A minimum of 24 hours must be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those Doctoral students who have not finished their degree programs and who are in the process of working on their dissertation. The student must have completed a minimum of 24 hours of dissertation research before being eligible to register for this course. Concurrent enrollment in any course is not permitted.

The following is a list of structured courses from which Ph.D. students in Agricultural Sciences may select in each of the emphasis areas. Students will not be limited to these courses, however, the majority of the courses that they may take are included.

Common Among Disciplines

EPSY 506-4	Inferential Statistics
EPSY 507-4	Multiple Regression
EPSY 508-4	Experimental Design in Educational Research
PSAS 560-5	Field Plot Technique
ZOOL 557-4	Biostatistics
ZOOL 558-4	Advanced Biostatistics

Agribusiness Economics

ABE 401-3	Agricultural Law
ABE 402-1 to 6	Problems in Agribusiness Economics
ABE 440-3	Natural and Environmental Resource Economics and Policy
ABE 444-3	Agricultural Development
ABE 450-3	Advanced Farm Management
ABE 451-3	Appraisal of Rural Property
ABE 453-3	Agribusiness Planning Techniques
ABE 460-3	Agricultural Price Analysis and Forecasting
ABE 461-3	Agriculture Business Management
ABE 462-3	Advanced Agricultural Marketing
ABE 463-3	Managerial Strategies for Agribusiness
ABE 500a,b-6(3,3)	Agribusiness Economics Research Methodology
ABE 551-3	Resource Allocation in the Agribusiness Firm
ABE 552-3	Problems and Policies of the Agricultural Sector
ABE 581-1 to 4	Seminar in Agribusiness Economics
ABE 585-1 to 6	Practicum/Internship

BA 505	Brand Management
BA 510	Managerial Accounting & Control Concepts
BA 514	Ethics of Business
BA 530	Financial Management
BA 531	Advanced Financial Management
BA 532	Financial Institutions and Markets
BA 533	Investment Concepts
BA 540	Managerial and Organization Behavior
BA 541	Operations Research II
BA 544	Advanced Production Planning and Inventory Management
BA 545d	Advances in Strategic Management
BA 550	Marketing Management
BA 551	Product Strategy and Management
BA 558	Promotional Strategy and Management
BA 560	Management of Information Systems
BA 561	Database Design and Applications
BA 562	Information Systems and Design
BA 564	Management of Marketing Information
BA 580	International Dimensions of Business and Management
BA 581	Global Marketing
BA 582	International Finance
BA 583	Global Operations Management
BA 584	Global Business Strategies
ECON 429-3	International Trade and Finance
ECON 431-3	Public Finance II
ECON 436-3	Government and Labor
ECON 440-3	Price, Output and Allocation Theories
ECON 441-3	Contemporary Macroeconomic Theory
ECON 463-3	Introduction to Applied Econometrics

ECON 474-3	Antitrust and Regulation
ECON 520-6 (3,3)	Economic Development Theory and Policy
ECON 522-3	Microeconomic Foundations of Labor Markets
ECON 530-3	Foreign Trade
ECON 531-3	International Finance
ECON 532-3	Economics of Human Resources
ECON 534-3	Economics of Taxation
ECON 540A-3	Microeconomic Theory I
ECON 540B-3	Microeconomic Theory II
ECON 540C-3	Microeconomic Theory III
ECON 541A-3	Macroeconomic Theory I
ECON 541B-3	Macroeconomic Theory II
ECON 541C-3	Macroeconomic Theory III
ECON 545-3	Resource Economics
ECON 567A-3	Econometrics I
ECON 567B-3	Econometrics II
ECON 567C-3	Econometrics III
ECON 580A-3	Performance Measurement
GEOG 401-3	Introduction to Geographic Information Systems
GEOG 406-3	Introduction to Remote Sensing
GEOG 408-3	Advanced Remote Sensing
GEOG 420-3	Advanced Geographic Information Systems (GIS) Studies
GEOG 422-4	Economics in Environmental Management
GEOG 424-4	Natural Resources Planning
GEOG 425-4	Integrated Water Management
GEOG 426-4	Administration of Environmental Quality and Natural Resources
GEOG 428-3	Spatial Decision Support Systems
GEOG 429-3	Geography and Organic Farming
GEOG 430-3	Environmental Systems Analysis
GEOG 431-3	Climate
GEOG 433-4	Field Methods in Weather and Water Resources
GEOG 434-4	Water Resources Hydrology
GEOG 435-3	Energy Planning
GEOG 436-3	Environmental Disaster Planning
GEOG 438-3	Applied Meteorology
GEOG 439-3	Climatic Change
GEOG 458-3	Analysis of Risk and Bioterrorism Using GIS
GEOG 471-3	Environmental Impact Analysis

Agricultural Operations and Systems

PSAS 461-3	Programming for Agricultural Systems
PSAS 472-3	Precision Agriculture
PSAS 473-3	Agricultural Automation
PSAS 476-3	Agricultural Safety and Health
PSAS 483-3	Agricultural Processing Systems
PSAS 497-2	Agricultural Operations Management
PSAS 560-5	Field Plot Technique
PSAS 572-3	Current Research in Agricultural Systems
PSAS 575-3	Agricultural Systems

Forestry

FOR 401-3	Fundamentals of Environmental Education
FOR 402-3	Wildland Hydrology
FOR 403-3	Agroforestry
FOR 405-2	Forest Management for Wildlife
FOR 408-4	Introduction to Remote Sensing and GIS
FOR 409-3	Forest Resources Decision-Making
FOR 410-3	Forest Resources Administration and Policy
FOR 411-3	Forest Resources Economics
FOR 412-2	Tree Improvement
FOR 414-3	Information Management
FOR 416-3	Forest Resource Management
FOR 417-2	Forest Land-Use Planning
FOR 418-2	Marketing of Forest Products
FOR 420-3	Park and Wildlands Management
FOR 421-3	Recreation Land-Use Planning
FOR 422C-4	Park and Wildlands Management Camp
FOR 423-3	Environmental Interpretation
FOR 428-2	Community Forestry
FOR 429-3	Watershed Management Field Laboratory
FOR 430-3	Wildland Watershed Management
FOR 431-3	Regional Silviculture
FOR 451-2	Natural Resources Inventory
FOR 452-2	Forest Soils
FOR 452L-2	Forest Soils Laboratory
FOR 453-2	Environmental Impact Assessment in Forestry
FOR 454-2-8	Forest Ecology Field Studies
FOR 460-2	Forest Industries
FOR 470-2	Wilderness Management, Policy, and Ethics
FOR 480-3	Natural Resource Advocacy
FOR 485-3	Social Influences on Forestry
FOR 500-2	Principles of Research
FOR 502-3	Advanced Watershed Hydrology and Management
FOR 504-2	Tree Physiology Concepts and Applications
FOR 508-2	Historical Ecology
FOR 510-2	Advanced Silviculture
FOR 511-2	Advanced Forest Resources Economics
FOR 512-2	Tree Selection and Breeding
FOR 516-2	Advanced Forest Management
FOR 520-2	Advanced Park Planning
FOR 521-2	Recreation Behavior in Wildlands Environments
FOR 523-2	Advanced Resource Interpretation
FOR 530-2	Forest Site Evaluation
FOR 531-2	Disturbance Ecology
FOR 585-3	Human Dimensions of Natural Resource Management
SOC 544 (3)	Sociology of Gender

SOC 555 (3)	Social Movements and Collective Action	PSAS 429-3	Advanced Landscape Design II
SOC 514 (4)	Qualitative Research Methods	PSAS 430-4	Plant Propagation
POLS 446 (3)	Museum Administration	PSAS 432-4	Garden Center and Nursery Management
POLS 549 (3)	Administration of Nonprofit Organizations	PSAS 433-4	Introduction to Agricultural Biotechnology (same as PLB 433)
PSYC 529 (3)	Structural Equation Modeling with LISREL	PSAS 434-3	Woody Plant Maintenance
PSYC 563 (3)	Research in Attitude and Persuasion	PSAS 436-4	Fruit Production
REC 500 (3)	Modern Concepts of Leisure	PSAS 437-4	Vegetable Production
		PSAS 441-3	Soil Morphology and Classification
		PSAS 442-3	Soil Physics
		PSAS 443-3	Soil Management
		PSAS 445-3	Irrigation Principles and Practices
		PSAS 446-3	Soil and Water Conservation
		PSAS 447-3	Fertilizers and Soil Fertility
		PSAS 448-2	Soil Fertility Evaluation
		PSAS 454-4	Soil Microbiology
		PSAS 455-3	Biology of Plant-Microbe Interactions
		PSAS 468-3	Weeds – Their Control
		PSAS 470-2	Post Harvest Handling of Horticultural Commodities
		PSAS 475-4	Golf Course Green Installation and Maintenance
		PSAS 518-3	Principles of Herbicide Action
		PSAS 520-3	Plant Growth and Development
		PSAS 524-2	Advanced Plant Genetics (same as PLB 524)
		PSAS 560-5	Field Plot Technique
		PSAS 570-4	Genomics
		PSAS 582-6	Colloquium in Plant and Soil Science
		PLB 400-4	Plant Anatomy
		PLB 405-4	The Fungi
		PLB 409-3	Field Mycology
		PLB 415-5	Morphology of Vascular Plants
		PLB 418-3	Plant Molecular Biology
		PLB 420-3	Techniques in Plant Molecular Biology
		PLB 421-4	Botanical Microtechnique
		PLB 430-3	Economic Botany
		PLB 439-2	Natural Areas and Rare and Endangered Species
		PLB 475-3	Advanced Cell Biology
		PLB 500-3	Advanced Plant Anatomy
		MBMB 421-3	Biotechnology
		MBMB 425-3	Biochemistry and Physiology of Microorganisms
		MBMB 451A/B-3/3	Biochemistry
		MBMB 453-3	Immunology
		MBMB 460-3	Genetics of Bacteria and Viruses
		MBMB 480A/B-2/2	Molecular Biology of Microorganisms Laboratory
		GEOL 470-3	Hydrogeology
		GEOL 474-3	Geomorphology
		GEOG 434-4	Water Resources Hydrology
Human and Animal Systems			
ANS 409-4	Equine Science		
ANS 415-4	Advanced Animal Nutrition		
ANS 419-4	Stable Management		
ANS 421-2	International Animal Production		
ANS 430-4	Dairy Cattle Management		
ANS 431-4	Reproductive Physiology		
ANS 433-4	Introduction to Agricultural Biotechnology		
ANS 434-4	Physiology of Lactation		
ANS 455-2	Animal Waste Management		
ANS 465-4	Swine Management		
ANS 485-4	Beef Cattle Management		
ANS 500-3	Research Methods in Agricultural Sciences		
ANS 506-3	Instrumentation M in Agricultural Science		
ANS 515-3	Energy and Protein Utilization		
ANS 516-3	Minerals and Vitamins in Animal Nutrition		
ANS 531A-2	Advanced Reproductive Physiology		
ANS 531B-2	Developmental Physiology		
ANS 531C-2	Endocrine Physiology		
FN 410-3	Nutrition Education		
FN 420-3	Recent Developments in Nutrition		
Plant Systems			
PSAS 401-3	Agricultural Plant Pathology		
PSAS 405-3	Plant Breeding		
PSAS 408-3	World Crop Production Problems		
PSAS 409-3	Crop Physiology and Ecology		
PSAS 419-3	Forage Crop Management		
PSAS 420-4	Crop Pest Control		
PSAS 422-3	Turfgrass Science		
PSAS 432-3	Greenhouse Management		
PSAS 424-4	Floriculture		
PSAS 425A-5	Advanced Plant Pathology (same as PLB 425a)		
PSAS 425B-5	Advanced Plant Pathology (same as PLB 425B)		
PSAS 426-4	Genomic and Bioinformatics		
PSAS 428-3	Advanced Landscape Design I		

ANIMAL SCIENCE

http://coas.siu.edu/default2.asp?active_page_id=112

COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

AbuGhazaleh, Amer A., Assistant Professor, Ph.D., South Dakota State University, 2002; 2004. Dairy Nutrition.

Apgar, Gary A., Associate Professor, Ph.D., Virginia Polytechnic Institute, 1994; 1998. Monogastric nutrition, swine production.

Arthur, Robert, Professor, *Emeritus*, Ph.D., University of Missouri, 1970; 1977.

Atkinson, Rebecca L., Assistant Professor, Ph.D., University of Wyoming, 2006; 2006. Beef nutrition, forages.

Davis, Jeremy, Assistant Professor, Ph.D., Iowa State University, 2008; 2009.

Gastal, Eduardo L., Assistant Professor, DVM, Federal University of Pelotas, Brazil; Ph.D., University of Wisconsin-Madison, 1985; 1999; 2009.

Goodman, Bill L., Professor, *Emeritus*, Ph.D., Ohio State University, 1959; 1958.

Hausler, Carl L., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1970; 1970.

Hinners, Scott W., Professor, Ph.D., *Emeritus*, University of Illinois, 1958; 1951.

Jones, Karen L., Associate Professor and *Chair*, Ph.D., Texas A&M, 1999; 1999. Animal biotechnology, genetics reproductive physiology.

Kammlade, W. G., Jr., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1951; 1954.

King, Sheryl S., Professor, Ph.D., University of California, Davis, 1983; 1983. Reproduction physiology, equine science.

Kroening, Gilbert H., Professor, *Emeritus*, Ph.D., Cornell University, 1965; 1969.

Minish, Gary., Professor, *Emeritus*, Ph.D., Michigan State University, 1996; 2004. Beef production and evaluation.

Olson, Howard H., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952; 1954.

Strack, Louis E., Associate Professor, *Emeritus*, D.V.M., University of Illinois, 1961; 1968.

Small, Brian C. Associate Professor, Ph.D., University of Maryland, 1998; 2009. Aquaculture & Fish Nutrition/Physiology.

Smith, Sylvia, Assistant Professor, Ph.D., University of Tennessee, 2007; 2008.

Winters, Todd A., Professor and *Associate Dean*, Ph.D., University of Wisconsin-Madison, 1992; 1994. Animal biotechnology, reproductive physiology, endocrinology.

Woody, Harold Dee, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1978; 1978.

Young, Anthony W., Professor, *Emeritus*, Ph.D., University of Kentucky, 1969; 1980.

The Department of Animal Science, Food and Nutrition offers programs of study leading to the Master of Science degree with a major in animal science. Programs may be designed in the various disciplines of nutrition, reproductive physiology, biotechnology and/ or growth and development with emphasis on beef cattle, dairy cattle, horses, swine or humans. Other animal or cell culture systems are sometimes used as research models.

Admission to programs administered by the Department of Animal Science, Food and Nutrition must be approved by the Graduate Programs Committee. Application forms are available online at

<http://www.gradschool.siu.edu/applygrad.htm>. Applicants must have the registrar of each college previously attended send official transcripts directly to the Department of Animal Sciences, Food and Nutrition.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Animal Science, Food and Nutrition. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Requirements

Minimum requirements for students entering the master's degree program are: (a) a bachelor's degree in Animal Science, Dairy Science, Biological Sciences, or related field; (b) a minimum 3.0 cumulative undergraduate G.P.A. ($A=4.0$); (c) 800 cumulative score with minimum scores of 350 on the verbal or quantitative sections and a 3.2 analytical writing score on the Graduate Record Exam (GRE); (d) Statement of Research Interests; and (e) three letters of recommendation (at least two from undergraduate professors). Students can be admitted with a G.P.A. under 3.0 or for a GRE deficiency on a conditional basis and must enroll in a minimum of seven hours of structured courses at the 400-500 level during their first semester and achieve a *B* or better in each course or be dropped from the program. Undergraduate courses cannot be given graduate credit.

Minimum requirements for the master's degree may be fulfilled by satisfactory completion of 35 semester hours of graduate credit, with a minimum of 20 hours inside animal science, a minimum of 15 hours of 500-level graduate courses, and at least 8 hours outside the College of Agricultural Sciences. A maximum of two animal production related courses (ANS 409, 430, 465, 485) may be counted

for graduate credit in the thesis option. Additional University requirements are stated in the SIUC Graduate Catalog. Specific required course work includes:

- a. Two semesters of ANS 581 (Seminar)
- b. Two semesters of graduate-level statistics
- c. A minimum of one semester of upper-level biochemistry
- d. Six credit hours of ANS 595

Each student, whether in the thesis or non-thesis option, will be mentored by a member of the Animal Science, Food and Nutrition faculty designated as the major professor. The major professor will serve as the research mentor and academic advisor. A graduate advisory committee will be selected with consultation of the major professor. The committee will consist of no fewer than three graduate faculty members. Two members of the committee must be from the Animal Science, Food and Nutrition faculty, and one of the members of the committee must be from outside

the department. The major professor will chair the student's graduate committee.

All candidates in the thesis option are required to conduct original research. All candidates in the non-thesis option cannot take ANS 599 (Thesis) for graduate credit. All students are encouraged to participate in research within the department to provide a broader experience. Each master's degree candidate must pass a comprehensive oral examination covering all graduate work including the thesis or research paper.

Information concerning admission policies, requisites for graduation, and availability of financial assistance for graduate study in animal science may be obtained from the Department of Animal Science, Food and Nutrition, Southern Illinois University Carbondale, Carbondale, IL 62901-4417; (618) 453-2329;

http://www.coas.siu.edu/default2.asp?active_page_id=112.

Courses (ANS)

Field trips are required for certain courses.

409-4 Equine Science. Designed for students interested in the more scientific aspects of equine physiology and management. The class will take a more advanced look at anatomy and physiology of the systems of the equine and consider how they relate to selection, use and management. Lecture and laboratory. Lab fee \$50. Prerequisite: 219 and 331.

415-4 Advanced Animal Nutrition. Advanced principles and practices associated with digestion, absorption and metabolism of nutrients as related to domestic monogastrics, ruminants and horses. Prerequisite: 215 and 315.

419-4 Stable Management. Designed for the advanced equine science student planning a career in the horse field. Teaches in-depth management techniques on an applied basis. Farm, animal, and business management are practiced. Extensive out-of-class practice time is expected. One-hour lecture, four hours laboratory. Laboratory fee \$75. Prerequisite: 409 with a grade of C or better or consent of department.

421-2 International Animal Production. A study of world animal production practices with emphasis on the developing countries. Adaptability of animals to environmental extremes and management practices employed to improve productivity. Prerequisite: Animal Science 121 and restricted to junior standing.

425-3 Biochemical Aspects of Nutrition. (Same as HND 425) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations.

Prerequisite: 215 or 320, Chemistry 140b or higher, course in Physiology.

426-3 Mammalian Endocrinology. Comparative endocrinology of the effects of hormones on target tissues including mechanisms of hormone biosynthesis, release, transports, receptor kinetics, and signal transduction. Measurement of hormones, receptors, and signal

transduction. Endocrine-related diseases and disorders. Prerequisite: course in physiology.

430-4 Dairy Cattle Management. Application of the principles of breeding, physiology and economics to management of a profitable dairy herd. Breeds of dairy cattle, housing, milking practices and quality milk production. Field trip. Laboratory/Field Trip Fee: \$35. Prerequisites: ANS 315, 332.

431-4 Reproductive Physiology. Comparative anatomy and physiology of the male and female reproductive system of domestic animals; hormones; reproductive cycles; mating behavior; gestation and parturition; sperm physiology; collection and processing of semen; artificial insemination, pregnancy tests; diseases. Laboratory fee \$10. Prerequisite: 121, 331.

433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene

mapping, cloning, transfer and expression will be derived. Restricted to : senior standing.

434-2 Physiology of Lactation. Anatomy and physiology of milk secretion; endocrine control; milk precursors and synthesis; milk composition; physiology and mechanics of milking; lactation-related disorders and diseases; transgenic milk. Prerequisite: course in physiology.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. (Same as Plant and Soil Science 435) Molecular biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed. Presentations on particular research problems will be made. Graded *S/U*.

455-2 Animal Nutrient Management. Scope and problems associated with animal nutrient management; current regulations and law on environmental protection. Principles covering waste management technology and current livestock nutrient management systems are presented. Field trips will be scheduled. Prerequisite: junior standing.

465-4 Swine Management. Swine production systems and management techniques including breeding and selection, reproduction, nutrition, herd health and disease prevention, housing and waste management, marketing, production costs and enterprise analysis. Field trip. Laboratory/Field Trip Fee: \$35. Prerequisites: 315,332.

485-4 Beef Cattle Management. Beef cattle production systems and management, breeding and selection, reproduction, nutrition, and herd health with emphasis on the most economical and efficient systems. Field Trip: \$35. Prerequisite: ANS 315, ANS 332.

495-1 to 6 Instruction in the Animal Sciences. Acquaints the students with different teaching environments and styles. Students will be expected to participate in instructing animal science courses. Prerequisite: junior standing. Consent of instructor. Not for graduate thesis option credit.

500-3 Research Methods in Agricultural Science. Experimental design and biometry as applied to biological and allied fields. Prerequisite: graduate student.

506-3 Instrumentation Methods in Agricultural Science. Basic methods and techniques of analytical instrumentation used in human and animal nutrition are taught in the lectures with applications of instruments carried out in the laboratories. Lab Fee: \$100. Prerequisites: Consent of instructor.

515-3 Energy and Protein Utilization. (Same as Food and Nutrition 515) Energy and protein utilization including digestion, absorption and metabolism as related to mammalian physiology. Prerequisite: Chem 339 or 340.

516-3 Minerals and Vitamins. (Same as Food and Nutrition 516) Basic and applied principles of mineral and

vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships. Prerequisite: 339 or 340.

531-1 to 6 (2,2,2) Advanced Animal Physiology. Advanced Physiological concepts as they relate to mammalian systems-subjects covered are: (a) advanced reproductive physiology (b) developmental physiology (c) endocrine physiology. Prerequisite: ANS 331 or PHSL 201.

565-3 Advanced Ruminant Nutrition. Principles of nutrients metabolism and utilization by ruminant animals in relation to maintenance, growth, reproduction and lactation. Prerequisites ANS 415 or consent of instructor.

581-1 to 2 (1,1) Seminar. Problems relating to various phases of animal industries. Maximum of one hour per semester.

588-1 to 8 International Graduate Studies. University residential graduate study program abroad. Prior approval by the department is required both for the nature of the program and the number of credit hours.

590-1 to 3 Readings in Animal Science. Reading in specialized fields under direction of approved graduate specialists.

593-1 to 3 Individual Research. Investigation of a problem in animal science under the supervision of an approved graduate specialist.

595-1 to 4 Instruction in Animal Sciences. Acquaints the students with different teaching environments and styles. Students will be expected to aid faculty in the instruction of animal science courses.

599-1 to 6 Thesis. Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Not for non-thesis option credit.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

FOOD AND NUTRITION

COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

Ashraf, Hea-Ran Lee, Professor, *Emeritus* Ph.D., Iowa State University, 1979; 1980.

Banz, William J., Professor, Ph.D., University of Tennessee, 1995; 1995. Human nutrition, nutritional physiology.

Endres, Jeannette M., Professor, *Emeritus* Ph.D., St. Louis University, 1972; 1975.

Girard, T.C., Associate Professor, M.S., University of Wisconsin-Stout, 1992; 1993. Hospitality and tourism.

Higginbotham, Allan, Assistant Professor, Ph.D., Auburn University, 2001; 2002. Nutritional endo-crinology, community nutrition.

Jones, Karen L., Associate Professor and *Chair*, Ph.D., Texas A&M, 1999; 1999. Animal biotechnology, genetics reproductive physiology.

Konishi, Frank, Professor, *Emeritus*, Ph.D., Cornell University, 1958.

Long, Sara, Professor, Ph.D., Southern Illinois University Carbondale, 1991; 1990. Clinical dietetics.

Peterson, Sharon L., Assistant Professor, Ph.D., Pennsylvania State University, 1996; 2006. Community nutrition.

Smith, Sylvia F., Assistant Professor, Ph.D., University of Tennessee 2007; 2007. Food Service Management, Culinary Tourism.

Winters, Todd A., Professor and *Associate Dean*, Ph.D., University of Wisconsin-Madison, 1992; 1994. Nutritional endocrinology and physiology.

The Department of Animal Science, Food and Nutrition offers a Master of Science degree in Food and Nutrition with two concentration options: *community nutrition* and *nutritional sciences*. For program details not included in this description, prospective community nutrition students may visit the dietetic internship site at http://www.coas.siu.edu/default.asp?active_page_id=1500. Nutritional sciences students should go to http://coas.siu.edu/default2.asp?active_page_id=1230.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Animal Science, Food and Nutrition. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Community Nutrition Concentration

The *community nutrition* curriculum incorporates the public health nutrition knowledge and skills criteria of the Association of Graduate Programs in Public Health Nutrition, Inc. In addition to master's degree work, students complete an accredited dietetic internship that qualifies them to take the registration examination for dietitians. Accreditation is from the Commission on Accreditation for Dietetics Education—CADE—of the American Dietetic Association, 120 South Riverside Plaza, Suite 2000, Chicago, IL 60606-6995. In addition to admission requirements below, students need a Verification Statement for having completed a Didactic Program in Dietetics issued by a CADE-accredited program director.

Admission

Applicants must meet the following criteria to be considered for admission to the program. Everyone, United States citizens and non-citizens alike, must complete a Didactic Program in Dietetics (DPD) accredited by the Commission on Accreditation for Dietetics Education (CADE). CADE is a specialized accrediting body recognized by the United States Department of Education and the Council for Higher Education Accreditation. CADE establishes and enforces "Eligibility Requirements and Accreditation Standards" for nutrition/dietetics education. It accredits education programs (including bachelor's and graduate level *Didactic Programs in Dietetics*) that prepare students for careers as "Registered Dietitians". More information about CADE is available online at <http://www.eatright.org/cade>.

- (1) A baccalaureate degree from a regionally accredited college or university (completed within the last ten years)
- (2) Completion of a Didactic Program in Dietetics (DPD) as accredited by the Commission on Accreditation for Dietetics Education. Students should supply appropriate documentation from their DPD Directors that is to be submitted with their application.
- (3) A grade point average of 3.0 or higher (where 4.0 = A) is recommended.
- (4) Completion of the Graduate Record Examination (GRE) within the last five years. A score of 1000 or higher on combined verbal and quantitative portions is recommended.
- (5) Desire to complete a Master of Science degree in Food and Nutrition with a concentration in community

nutrition combined with a 7 and 1/2 month dietetic internship with community nutrition emphasis.

- (6) International students who have not completed a Didactic Program in Dietetics should review the "International Fact Sheet" on the web at <http://www.eatright.org/CADE/content.aspx?id=7979>. This is a 10-page document that answers many questions about education and credentialing requirements for *registered dietitians* and *dietetic technicians registered* in the United States.
- (7) **D&D Matching.** Applicants to Dietetic Internships (DI) must participate in computer matching. Instructions and a mark/sense card to prioritize DI preferences can be requested from any CADE-accredited Didactic Program in Dietetics or from D&D Digital Systems, 304 Main Street, Ames, IA. 50010-6148. Allow turn around time for submitting by postmark deadline. There is no charge for this material. However, there is a \$50.00 charge for matching that is due with prioritized program rankings. **SIUC's Match Number is 438.** SIUC matches only during the spring. Students who match with SIUC through the spring matching process are enrolled in SIUC's program in August (fall semester).

Program Completion Requirements

Unless otherwise stated, the policies of the University and of the Graduate School shall establish the minimum requirements for retention in and graduation from the program. This includes a minimum grade point average for graduation of 3.0 (4.0 point scale).

The *Community Nutrition* concentration requires 38 credit hours from the following: FN 540, FN 574, FN 585, WED 561, FN 530, HED 493, HED 483 or HED 500, EPSY 506, FN 581, FN 599 or FN 593, FN 580A, FN 580B, FN 580C. The thesis or research paper committee is composed of at least 2 departmental faculty members and one faculty member from outside of department. Master's degree

candidates must pass a comprehensive oral examination conducted by their committee, covering all graduate work including thesis or research paper.

Nutritional Sciences Concentration

Students applying to the *nutritional sciences* concentration are expected to have an undergraduate degree in biological sciences, such as nutrition, physiology, zoology, or a related field. Students are also expected to have strong academic and analytical skills.

Admission

A grade point average of 3.0 or higher (4.0 = A) and a score of 1000 or higher on the combined verbal and quantitative portions of the Graduate Record Examination are recommended for program entrance. Students should submit a statement of career goals and interest in completing the master's degree, as well as 3 letters of recommendation from former professors or employers.

Program Completion Requirements

Unless otherwise stated, the policies of the University and of the Graduate School shall establish the minimum requirements for retention in and graduation from the program. This includes a minimum grade point average for graduation of 3.0 (4.0 point scale). The *nutritional sciences* concentration requires 12 to 16 credit hours from the following: FN 581, EPSY 506, EPSY 508 or WED 561, FN 599, or FN 593. The graduate committee will assist with the selection of an additional 14 to 18 credit hours of graduate coursework appropriate for their concentration. This concentration requires a minimum of 32 credit hours to graduate. The graduate student's committee will be composed of at least two departmental faculty members and one faculty member from outside of department. Master's degree candidates must pass a comprehensive oral examination conducted by their committee, covering all graduate work including their thesis or research paper.

Courses (FN)

Food and Nutrition is a program within the Department of Animal Science, Food and Nutrition.

515-3 Energy and Protein Utilization. (Same as Animal Sciences 515.) Energy and protein utilization including digestion, absorption, and metabolism as related to mammalian physiology. Prerequisite: course in organic chemistry.

516-3 Minerals and Vitamins. (Same as Animal Science 516.) Basic and applied principles of mineral and vitamin metabolism. Emphasis on metabolic functions, reaction mechanisms and interrelationships. Prerequisite: course in organic chemistry.

530-3 Advanced Nutritional Assessment and Education. Community assessment methods,

specifications or particular tools used and how these tools can be applied to particular conditions of concern in community nutrition. The methods of education for individuals and populations using dietary, biochemical, anthropometrics and physical assessment data will be taught. Prerequisite: 321 or consent of instructor.

540-3 Nutrition Policy, Programs and Services. The study of policies, programs and services concerned with prevention and treatment of nutrition problems in the population. Prerequisite: 480 and consent of instructor.

574-3 Advanced Medical Nutrition. In-depth study of the application of nutrition to the management of disease

states with emphasis on current treatment and complex metabolic abnormalities. Prerequisite: 470 or equivalent.

580-9 (3,3,3) Nutrition Practicum in the Community. Designed to provide practicum experiences in dietetics for students completing the Master's in Food and Nutrition and includes (a) clinical rotation, (b) management rotation, (c) public health nutrition rotation. Prerequisite: 585 and consent of instructor.

581-1-2 (1, 1) Seminar. An integration of the knowledge gained from the didactic and experiential learning prior to the clinical, food service, and public health field experiences. Maximum of one hour per semester. Prerequisite: 480 or consent of instructor.

585-3 Advanced Community Nutrition. A presentation and examination of issues and programs in food and nutrition programs. Elements including the organization and management of quality nutrition services for the prevention of disease and promotion of health will be identified and applied to community programs. Prerequisite: 480 or consent of instructor.

Courses (HND)

Human Nutrition and Dietetics

410-3 Nutrition Education. Principles, techniques and evaluation methods necessary to incorporate nutrition into the educational curriculum of schools, hospitals, out-patient clinics, and health agencies. Prerequisite: 321.

420-3 Recent Developments in Nutrition. Critical study of current scientific literature in nutrition. Prerequisite: 320.

425-3 Biochemical Aspects of Nutrition. (Same as Animal Science 425.) The interrelationship of cell physiology, metabolism and nutrition as related to energy and nutrient utilization, including host needs and biochemical disorders and diseases requiring specific nutritional considerations. Prerequisite: 215 or 320 Chemistry 140b or higher, course in Physiology.

461-3 Service Organization and Management. (Same as Human Nutrition and Dietetics 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership and human resource issues are examined. Prerequisite: Management 304 or Psychology 323 or consent of instructor.

Courses (HTA)

Hospitality and Tourism Administration

421A,B,C Developments in Hospitality. Critical study of current scientific literature in food. Restricted to: consent of instructor.

435-3 Hospitality Marketing Management. This course concentrates on marketing hotels, restaurants and tourism.

590-1 to 3 Reading in Food and Nutrition. Individual readings in food and nutrition under graduate faculty guidance. Prerequisite: consent of instructor.

593-1 to 3 Individual Research. Investigation of a problem in food and nutrition under the supervision of an approved graduate faculty member. Graded *S/U* only.

599-1 to 6 Thesis. Credit is given for a Master's thesis when it is accepted and approved by the thesis committee. Graded *S/U* only.

601-1 Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

470-5 Medical Nutrition Study of pathophysiology and principles of nutrition therapy for various disease states. Application of nutrition therapy principles. Off-campus experience may be required. Prerequisite: 320, 321, Allied Health 105, Chemistry 140b, Physiology 201 and 208.

475-3 Nutrition Through the Life Cycle. The study of human nutrition during each phase of the life cycle, prenatal through geriatric. Students elect at least two phases for in-depth study. A general review of basic nutrition is included. Prerequisite: 320.

480-3 Community Nutrition. Study of the objectives, implementation strategies, and evaluation methods of nutrition programs in community health programs. Integration of nutrition into the health care system at local, state and federal levels included. Prerequisite: 475

485-3 Advanced Nutrition. This course applies advanced principles of biochemistry and physiology to expand on basic nutrition information and explains the role of nutrients from cellular and mechanistic aspects. Prerequisite: 320, 425 or equivalents.

Problems and characteristics specific to the students will be able to develop a comprehensive strategy for marketing a hospitality operation. The starting point for the hospitality industry will be examined. By the end of the course students will be able to develop a comprehensive strategy for marketing a hospitality operation. The starting point for

the development of hospitality marketing strategy assumes basic marketing knowledge has been derived from completing a previous marketing course. Prerequisite: Marketing 304.

440-3 Hospitality Risk Management. Introduction to risk management, security, liability and contact management applicable to the awareness and/or operations of hotel, restaurants and resorts. Prerequisite: 202, Management 304.

460-4 Food Service Management. Practical experience in the operational administration of a food service facility by providing opportunities to demonstrate ability and creativity in managing noon lunch services for the Old Main Room. Students fill various roles in food service and may need to fulfill laboratory time outside the regular schedule. Lab fee: \$30. Prerequisite: 360. Restricted to HTA major.

461-3 Service Organization and Management. (Same as Human Nutrition and Dietetics 461) Managerial aspects of the hospitality industry as related to provision of quality service. Organizational structures, management techniques, decision-making abilities, ethics, leadership and human resource issues are examined. Restricted to: HTA and HND major.

465-3 Convention Management and Services. This course serves as a primer to the understanding of the role meeting and convention planning business plays in hotel profitability. Students will explore successful procedures, practical insight, and foundational knowledge to succeed in convention management and services. Prerequisites: 202, 372, Management 304.

473-3 Hotel Administration. An advanced hotel administration course covering contemporary management issues such as conference management, hotel security, strategic planning, and hotel law. Prerequisite: 202, 372, Management 304.

ANTHROPOLOGY

www.anthro.siu.edu/
pwelch@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Adams, Jane H., Professor, Ph.D., University of Illinois-Urbana, 1987; 1987. Sociocultural anthropology, political economy, agricultural systems, history, gender roles; rural US, Latin America.

Balkansky, Andrew K., Associate Professor, Ph.D., University of Wisconsin, 1997; 2003. Archeology, settlement patterns, social evolution, urbanism; Mexico, Central America.

Barrios, Robert E., Assistant Professor, Ph.D., University of Florida, 2004; 2006. Public anthropology, medical anthropology, anthropology of disasters, science and technology studies, postcolonial studies, Mesoamerican ethnography.

Butler, Brian M., Adjunct Professor, Ph.D., Southern Illinois University Carbondale, 1977; 1977. Archaeology, cultural resource management, prehistoric subsistence and settlement systems; southeastern and midwestern US.

Corruccini, Robert S., Professor, *Distinguished Scholar*, Ph.D., University of California, Berkeley, 1975; 1978. Physical anthropology, paleontology, osteology, multivariate methods, dental anthropology, epidemiology; India, Italy, Caribbean.

Ford, Susan M., Associate Professor and *Chair*, Ph.D., University of Pittsburgh, 1980; 1979. Physical anthropology, primate paleontology and systematics (especially New World monkeys and early anthropoids), evolutionary theory, functional and comparative anatomy; South America.

Fuller, Janet M., Associate Professor, Ph.D., University of South Carolina, 1997; 2004. Sociolinguistics, bilingualism and language contact, discourse analysis, language and gender, Pennsylvania German, Mexican-American bilingual speech.

Gumerman, George J., Professor, *Distinguished Scholar*, *Emeritus*, Ph.D., University of Arizona, 1968; 1973.

Handler, Jerome S., Professor, *Distinguished Scholar*, *Emeritus*, Ph.D., Brandeis University, 1965; 1962.

Hill, Jonathan D., Professor, Ph.D., Indiana University, 1983; 1986. Ethnology, ecology, history, ethnomusicology, structural-semantic analysis; Amazon.

Hofling, C. Andrew, Professor, Ph.D., Washington University, 1982; 1996. Linguistics; discourse analysis, Maya; Mesoamerica.

Lapham, Heather A., Adjunct Assistant Professor, Ph.D., University of Virginia, 2002; 2002. Archeology of trade and exchange, European-Indian interaction, faunal analysis, beads; eastern US.

Maring, Ester G., Assistant Professor, *Emeritus*, Ph.D., Indiana University, 1969; 1965.

Maring, Joel M., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1967; 1963.

McCall, John, Associate Professor, Ph.D., Indiana University, 1992; 1995. Sociocultural anthropology, social theory, epistemology, history, ritual studies, medical anthropology, expressive culture; Africa.

Muller, Jon D., Professor, *Emeritus*, Ph.D., Harvard University, 1967; 1966.

Prowse, Tracy L., Assistant Professor, Ph.D., McMaster University, 2001; 2006. Human osteology, bioarchaeology, stable isotope analysis, paleonutrition, paleopathology, infant and childhood health, Roman archaeology.

Rands, Robert L., Professor, *Emeritus*, Ph.D., Columbia University, 1952; 1966.

Reichard, Ulrich, Assistant Professor, Ph.D., Goettingen University, 1995; 2006. Primate evolution, behavior, socioecology and cognition; human origins and human evolution; Asian primates.

Rice, Don, Professor, Ph.D., Pennsylvania State University, 1976; 1991. Archaeology, ethnohistory, tropical ecology, development of complex societies; Middle America, Andes.

Rice, Prudence M., Professor, *Distinguished Scholar*, Ph.D., Pennsylvania State University, 1976; 1991. Archaeology, ceramics; Mesoamerica; Andes.

Riley, Carroll L., Distinguished Professor, *Emeritus*, Ph.D., University of New Mexico, 1952; 1955.

Shimada, Izumi, Professor, *Distinguished Scholar*, Ph.D., University of Arizona, 1976; 1994. Archaeology, complex societies, technology and craft production, urban and ceremonial centers, experimental archaeology; Andes.

Sutton, David, Associate Professor, Ph.D., University of Chicago, 1995; 1999. Anthropological theory/ethnographic inquiry, social anthropology, cultural analysis.

Webster, Anthony K., Assistant Professor, Ph.D., University of Texas, 2004; 2005. Ethnopoetics, Athabaskan linguistics, orality and literacy, identity, Navajo poetry, Coyote, phonology, historical linguistics, language maintenance.

Welch, Paul D., Associate Professor, Ph.D., University of Michigan, 1986, 2001. Archaeology, politics and economics in midrange societies, eastern U.S. quantitative methods.

The Department of Anthropology offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees. Provided the student has been admitted to the Graduate School and meets its requirements, acceptance and continuation in the graduate program are at the discretion of the Department of Anthropology.

The philosophy of the Department of Anthropology is to produce students with broad backgrounds in the major sub-fields of anthropology and expertise in particular specialty areas. Within this philosophy, and subject to the requirements discussed below, the department offers a flexible program which will serve students with diverse needs and goals.

Admission

The applicant to the anthropology program must send a completed application for admission to graduate study and certified copies of all transcripts directly to the department, and must meet all Graduate School requirements for entry. Applicants whose native language is not English must achieve a TOEFL of 600 paper score or 250 computer score or higher as well as take the Test of Written English (TWE), and the TWE score must be at least 5.0 (on a scale of 1 to 6) in order to gain admittance in the program. The Graduate Record Exam (GRE) is required for all U.S. applicants. Preference will be given to applicants who achieve the sum of a score of 1100 or higher on verbal and either quantitative or analytical sections of the exam. Although not required to take the GRE prior to admittance, all foreign students are strongly encouraged to take the exam prior to entering the graduate program and are required to take the exam before the end of their first year in the program.

Applicants who wish to be considered for university Graduate School fellowships must have all application materials completed by January 15. Applicants who wish to be considered for admission into the graduate program in the fall semester of the next academic year and who wish to be considered for departmental graduate assistantships must have all application materials completed by March 1. Applications not received or completed prior to March 1 will be considered only in exceptional cases, as determined by the Director of Graduate Studies in consultation with other members of the Graduate Studies Committee.

In addition, the applicant must send a completed departmental application for admission and financial aid form, personal data sheet, statement of academic and professional goals, and arrange for three letters of recommendation to be sent to the Director of Graduate Studies of the Department of Anthropology. All necessary forms will be provided to applicants by the department. No special program of previous work is required. Applicants with academic degrees in fields other than anthropology are encouraged to apply.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application

for Admissions to Graduate Study in Anthropology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master's Degree Program

In addition to the master's degree requirements specified in the Graduate Catalog, the following departmental requirements apply to all M.A. degree candidates:

- (1) Each student must complete five core courses, ANTH 500a, b, c, d, and e, with an average grade of *B* or higher, no more than one *C*, and no grade lower than *C*. It is preferred that these courses be completed during the first year; no more than one core course can be deferred into the second year, and ANTH 500E must be completed during the first Fall semester in the program. At the end of the student's first year of study, the faculty will evaluate each student's performance in the completed core courses along with the rest of the student's record and arrive at a decision on the student's continuation in the program. This decision will take into account the overall evidence of the student's abilities, potentials, and interests.
- (2) Each student must complete 1 or more regular graduate-level courses or seminars in each of 2 subdisciplines of the student's choice (from among archaeological, linguistic, physical, sociocultural anthropology) beyond the core courses.
- (3) A further 9 hours of course work will be assigned by the student's committee after consultation with the student. These 9 hours may include up to 4 hours of graduate credit to meet tool requirements, and may not include more than 3 hours of independent study or thesis. No more than 3 hours of credit in ANTH 501, 590, 597, and 599 (thesis) may be applied toward the Graduate School requirements of 30 hours of graduate course credit and 15 hours of 500-level credit. The department requires 2 additional seminars (500-level course) beyond the 5 core courses and the thesis hours.
- (4) Each student must demonstrate a reading competence in a relevant language foreign to the student.

Students entering the program may petition to have previously taken courses accepted for credit as equivalent to core courses in cases where the equivalence can be documented.

M.A. Degree Committee, Thesis, Research Paper. Each student in the M.A. degree program will consult with the Director of Graduate Studies and relevant faculty members to select a three-person faculty committee, which will assume major responsibility for the student's advisement. At least 2 members of this committee, including the chair,

must be from the Department of Anthropology, and the third member may be selected from outside the department. At least the chair should be chosen by the end of the first year, and the entire committee by the end of the third term.

Under the direction of the M.A. degree committee, the student will complete a thesis and register for at least three hours of Anthropology 599 while doing so. A student may submit a published paper, or one accepted for publication in an approved professional journal, instead of a thesis, or may be authorized by the department to substitute a research paper for the thesis. Passing of a comprehensive examination on the student's entire program is a Graduate School requirement. One properly bound copy of the thesis, research paper, or article must be deposited with the department before the degree is granted.

An option is available, at the discretion of the departmental faculty, to allow exceptional M.A. students accelerated entry in the doctoral program at the end of their first year of M.A. study. For these students, the following are sufficient for the M.A. degree in Anthropology:

- (1) completion of 30 hours of coursework, including 21 hours at the 500 level (which can include up to 9 hours of Anthropology 598 - Research); and
- (2) a research paper (normally one prepared for a class in the student's subdiscipline) approved by the student's adviser and the Director of Graduate Studies, and submitted to the Graduate School.

No additional stipulations on the nature of the coursework (beyond the core courses) nor a language requirement are imposed.

The Department of Anthropology may offer direct post-baccalaureate degree entry to the doctoral program under exceptional circumstances, when a student's past work is determined to be of sufficient scope and excellence as to merit equivalence to an M.A. research degree. Students admitted under this option are subject to all existing requirements for the doctoral degree; the admissions/advisory committee for the student may add extra requirements based on the student's background.

Doctor of Philosophy Degree Program

Applicants to the Ph.D. degree program must complete the equivalent of the master's degree and apply directly to the Graduate School for admission as a doctoral student. Three letters in support of the application must be forwarded to the Director of Graduate Studies in the Department of Anthropology. Students must also supply a statement of goals for their programs and subsequent professional careers. The department will offer an accelerated entry option to students who have been admitted at M.A. level and who are judged by the faculty of the department to be prepared to begin research at the doctoral level. Such students must complete at least one term in the M.A. degree program before being admitted at Ph.D. level, and must then meet all retention and exit

requirements for the regular doctoral option. The students need not submit the application materials required of regular applicants to the Ph.D. degree program outlined above.

Students are required to demonstrate breadth of competence in the four sub-disciplines of Anthropology. Retention beyond the first year will be determined by an evaluation of course work for the first year and the maintenance of a minimum GPA of 3.2. Students will then form a faculty committee in consultation with the Director of Graduate Studies and relevant members of the faculty. The committee must include at least 5 members of the graduate faculty, at least 3 of whom (including the chair) must be from within the department, and at least 1 from outside: the normal case will be 4 from within and 1 additional.

The requirements for the Ph.D. degree include the following:

- (1) Additional course work in anthropology and other fields within the student's interests. Of the 24 hours of credit required to establish residency, 9 must be in 500-level anthropology courses other than 500a,b,c,d,e, 501, 585, and 597. The Ph.D. committee is expected to help formulate a study program that will usually involve at least one additional academic year of full-time course work beyond the M.A. degree.
- (2) Research tool requirements. These vary and will be determined between the students and the committee, subject to approval of the chair of the department. In all cases a certified reading knowledge of at least one foreign language will be required and at least one other tool. Other possible tools could include, for example, computer science, statistics, a second foreign language, or a combination of these or others.
- (3) Administration by the committee of a special examination with both written and oral components covering topical and geographical specialties (the preliminary or candidacy exam). The student may not take the examination until 2 years of full-time post-baccalaureate study have been completed and SIUC residency attained. The student is encouraged to take this examination by the end of three years of full-time Ph.D. level work. In evaluating the examination, the committee may pass the student, pass with conditions, fail the student but allow retaking of part or all of the examination at a later time or fail the student and recommend dismissal from the program. If a student fails the examination and the committee allows reexamination, it must occur within one year of the first examination and only one retake is allowed.
- (4) Dissertation prospectus approved by student's committee and formally presented to the department.

(5) Formal experience in teaching.

Ph.D. Candidacy. After completion of the above requirements, the department will recommend a student to the Graduate School for candidacy. The candidate will design dissertation research in consultation with the committee and will undertake the research necessary to acquire the materials for the dissertation. Candidates must register for 24 hours of credit under ANTH 600.

When a final draft of the dissertation has been accepted by the Ph.D. committee, an oral defense of the dissertation and all supporting work will be held in accordance with Graduate School requirements. After a successful dissertation defense and completion of final revisions of the text, the student must submit two copies of the dissertation to the Graduate School in accordance with its guidelines, and a properly bound copy to the Department of Anthropology.

Courses (ANTH)

404-3 Art and Technology in Anthropology. An introduction to the basic ways in which people utilize the natural resources of their habitat to meet various needs, such as food, shelter, transportation and artistic expression. The nature of art, its locus in culture and its integration into technical society will be considered.

405-3 How to Do Anthropological Research. This course is designed to teach students the skills needed to consume the professional literature of anthropology intelligently. The subjects covered include: the importance of research questions or hypotheses, the logic of deducing test implications, literature search, sampling, measurement issues, data reduction and graphing and simple inferential statistics.

406-3 Introduction to Historical Linguistics. (Same as Linguistics 406) An introductory survey of historical and comparative linguistics, including terminology, assumptions and methods of investigation. Satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: One of ANTH 240b, LING 300, LING 405, or ANTH 500b.

410A-3 Practicing Anthropology. This course is designed to get students acquainted with the notion of development and the challenges that the practice of anthropology faces when directed towards development and social change in both developing and developed countries. Prerequisite: 240d recommended for undergraduates.

410C-3 Economic Anthropology. The study of non-Western economic systems. Prerequisite: 240d recommended for undergraduates.

0410E-3 Anthropology of Law. Anthropological thought on imperative norms, morality, social control, conflict resolution and justice in the context of particular societies, preliterate and civilized. Law of selected societies is compared to illustrate important varieties. Prerequisite: 240d recommended for undergraduates.

410F-3 Anthropology of Religion. A comparative study of (religious) belief systems, with emphasis upon those of non-literate societies. Examination of basic premises and elements of these belief systems, normally excluded from discussions of "Great Religions". Prerequisite: 240d recommended for undergraduates.

410G-3 Urban Anthropology. Contemporary cities are dynamic places where populations that differ in terms of class, race, and ethnicity establish particular relationships

with geographic space and architectural structures. This class is designed to teach students how to experience and analyze urban spaces from an anthropological perspective, and how to apply anthropological theory and methods in urban planning.

410I-3 Identities: Global Studies in Culture and Power. This course surveys recent studies of sociocultural identities based on ethnicity, class, race, gender, nationality, age, language, and other criteria, as aspects of broader struggles over power and meaning. Topics to be addressed are critical analyses of identity politics in the Americas, Europe, Middle East, Asia, and other regions; historical approaches to studying identities; and ethnographic studies of transnational and diasporic communities.

410J-3 Kinship and Social Organization. Universal features of non-Western systems of kinship terminology and social organization. Topics include the structure and functioning of kinship systems, lineages, clans, sibs, phratries, moieties and tribal units. Prerequisite: 240d recommended for undergraduates.

410K-3 Ecological Anthropology. An examination of the relationship of past and present human populations in the context of their natural and social environments.

410L-3 Transcending Gender. How do humans become male and female in different societies? Can men become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What is the relationship between gender, militarism and war? These and other questions will be examined in cross-cultural perspective. Prerequisite: 240d recommended for undergraduates. (Same as WMST 410)

410M-3 Healing and Culture. This course examines systems of healing and medicine from an anthropological perspective. The theory and practice of medicine in different cultures, including Western biomedicine, are considered. Particular attention is given to the ways in which medical knowledge gains legitimacy in different social contexts and the problems which arise in culturally heterogeneous arenas when different medical paradigms contend for legitimization.

410N-3 Anthropology of Popular Culture. An examination of recent approaches to popular culture, material culture and consumption in anthropology. Special topical focus will include sports, television and movies, food and shopping. The course will be organized around several fieldwork projects in the Carbondale community. Prerequisite: 240d recommended for undergraduates.

410O-3 Colonialism and Post-Colonialism. This course is designed to familiarize students with the experience of colonialism and the political, social, cultural implications of it. The analysis will not be limited to the study of the colonial period, but it will examine the complexities of contemporary post-colonial societies and cultures.

410P-3 Ethics and Research. This course examines the risks that any anthropological research poses, both in fieldwork and writing, as well as the questions and dilemmas that any social scientist should be aware of before getting involved in any research practice. Prerequisite: 240d recommended for undergraduates.

410Q-3 Food, Symbol, and Society. In this course we will explore all aspects of the social uses and symbolic meanings we attach to food and eating. How do we use food to make friends, to make enemies, and to make ourselves? What is changing in our food consumption patterns? What are some of the politics and ethics involved in producing and marketing food? What is the significance of eating out? How do we analyze the smell and taste of food cross-culturally? Prerequisite: 240d recommended for undergraduates.

410R-3 Anthropology of Science and Technology. Technologies and scientific knowledge are commonly thought of as being universally applicable and as representations of truths about the operations of the world that are independent of culture. Anthropological studies, however, suggest that the efficacy of scientific knowledge and technologies is specific to the localities in which they are produced. This course introduces students to the primary concerns of the anthropology of science.

412-3 Visual Anthropology as a Research Methodology. The new digital technologies provide exciting new ways to conduct anthropological research and present research findings. They also raise technical, methodological and ethical questions for researchers. This course examines these issues through readings and analysis of examples of use of these media digital video, still photography, and web authoring – in the field and in presentation to a scholarly and larger public.

415-3 Sociolinguistics. (Same as Linguistics 415) History, methodology and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: one of the following – ANTH 240B, LING 200, LING 300, ANTH 500B, or LING 505.

417-3 Language Contact. This course will introduce students to the social conditions under which language

contact occurs and the cultural and linguistic consequences of such contact. Primary topics will be language maintenance and shift, ideologies and attitudes regarding bilingualism, and language development and change, using data from a variety of languages and cultures. Provides a comprehensive background for research on bi- or multilingual settings. Prerequisite: one of ANTH 240B, LING 200, LING 300, ANTH 500B, or LING 505.

420-3 Mayan Texts. Detailed examination of Mayan texts written in Mayan languages in their cultural contexts. Texts may range from pre-Columbian hieroglyphic texts, colonial Mayan texts to modern texts.

421-3 Descriptive Phonetics and Phonology. The course introduces students to the study of phonetics and phonology from an anthropological and descriptive perspective. The course is interested in; how are sounds produced and how do they then become meaningful in languages. Special attention is paid to metrical phonology.

422-3 Grammatical Analysis. A basic introduction to the analysis of morphology and syntax in languages of the world from a functional perspective. A broad range of grammatical patterns will be introduced and examined, equipping the student to investigate the diversity of language structures. Prerequisite: 240b or consent of instructor.

424-3 Native American Verbal Art. (Same as ENGL 424) This class examines the oral traditions (story-telling, poetry, song, chant, etc.) of Native American Peoples. This class focuses on the ways that Native American verbal art has been presented/represented by outsiders as well as on the formal features and forms of Native American verbal art. Attention is paid to the place and structure of verbal art in Native societies. This class focuses on the broad spectrum of verbal art in North America.

425-3 Cognitive Anthropology. The theory of culture as cognitive organization is explored. Among the topics are: Formal analysis of lexical domains, folk classifications and strategies, the problem of psychological validity, linguistic determinism and relativity, biogenetic and psycholinguistic bases of cognition and the “new ethnography.”

426-3 Gender, Culture, and Language (Same as Women's Studies 426 and Linguistics 426). This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use.

428-3-9 Indigenous Languages of the Americas (Same as ANTH 328). These courses explore the myriad of indigenous languages of the Americas. Focus is both descriptive and anthropological. Languages are considered with respect to their grammatical and discursive structures,

historical relations, and their place within the sociocultural milieu of speakers. Areal foci differ between different sections and include: (a) North America, (b) Mesoamerica, and (c) South America. Prerequisite: ANTH 240b or equivalent.

430A-3 Archaeology of North America. Detailed study of the early cultures of North America. Emphasis on the evolutionary cultural development of North America. Prerequisite: 240c or consent of instructor.

430B-3 Archaeology of Meso-America. Detailed study of the early cultures of Meso-America with emphasis on the evolutionary cultural development of Meso-America. Prerequisite: 240c or consent of instructor.

430C-3 Archaeology of Africa. Detailed study of Sub-Saharan African prehistoric and historic cultures with emphasis on ecological, evolutionary and historical developments. The course examines human cultural origins, the rise of civilizations, and the diversity of human societies into early historic times.

430 D- 3 to 9 (3 per topic) Art and Archaeology of the Ancient Mediterranean. An introduction to art historical, archaeological, and historical approaches to the physical remains of the ancient Mediterranean. Emphasis normally on Greece or Rome. Can be repeated if offered on different topics. Occasionally offered overseas. Same as CLAS 310 and AD 407.

430F-3 Archaeology of South America. Survey of the prehistory and ethnohistory of South America, including the peopling of the South American continent, the development of early cultures, the rise and fall of Andean empires, and the impact of Spanish contact and conquest. Prerequisite: 240c or consent of the instructor.

440A-3 The Fossil Evidence for Human Evolution. An advanced consideration of the fossil evidence for human evolution and evaluation of the various theories regarding the course of human evolution.

440B-3 Race and Human Variation. A consideration of the range, meaning and significance of contemporary human biological variation, including evolutionary and adaptive implications and the utility of the race concept.

440C-3 Context of Human Evolution. This course will provide an ecological, behavioral, geological, geographic and theoretical context from which to understand the evolutionary history of modern humans. The course is designed to complement Anthropology 440a.

441A-3 Laboratory Analysis in Archaeology: Ceramics. Being durable, abundant, and full of information about food, social customs, styles, and even ideology, pottery provides a wealth of information about past societies. This course covers the major aspects of pottery analysis, including studies of raw materials, production techniques, function, and exchange. The course is partly lecture, partly lab based. Prerequisites: 240c or equivalent.

441B-3 Laboratory Analysis in Archaeology: Archaeometry. This course surveys technical methods of the physical and natural sciences in archaeological

analysis. Rather than focusing on a specific set of materials (as is done in the other courses in the 441 series), this course covers a broad spectrum of technical studies, including chronometry as well as the analysis of ceramics, metals, textiles, and ecofacts. Prerequisite: 240c or equivalent.

441C-3 Laboratory Analysis in Archaeology: Lithics. This course provides an introduction to lithic analysis in archaeology. Students will be introduced to technological and functional analyses, typological studies, use-wear analysis, debitage analysis, and related subjects. The focus will be on chipped stone but ground stoned will also be considered. The overall goal is to show how lithic analysis can address broader anthropological questions. Prerequisite: 240c or equivalent.

441D-3 Laboratory Analysis in Archaeology: Zooarchaeology. This course introduces students to zooarchaeology, including the techniques of faunal analysis, current theories, and methods used to interpret faunal data. It familiarizes students with the major research questions that animal remains from archaeological sites can be used to investigate. Students will be given their own sample faunal assemblage which they will be expected to sort, analyze, and interpret during the course of the semester. Prerequisite: 240c or equivalent.

442-1 to 12 Working with Anthropological Collections. Management, curation and analysis of anthropological collections as part of a research project created by the student. May be taken independently or as a follow-up to 450, 495, 496, 497, 596, or 597.

444-3 Human Genetics and Demography. A course in human genetics with an emphasis on population genetics and demography of modern and ancient human populations.

450A-3 Museum Studies - Learning in Museums. A detailed study of museum in the context of their use of exhibitions as an educational medium. Covers the evolution of the museum as a learning environment and the application of learning theory and principles in modern museums. Emphasis is placed on practicum experiences involving the design of learning experiences and educational programs in the museum setting.

450B-3 Museum Studies Methodology and Display. A detailed study of museums in the context of their use of exhibitions as an educational medium. Focus on the history of museums exhibitions and instruction in the fundamentals of educational exhibit design and curatorial research. Emphasis is placed on practicum experiences involving the design of educational exhibits and curatorial research. Laboratory/field trip fee: \$20.

455A-3 Dental Anthropology. Developmental origins of vertebrate teeth, anatomy and occlusal function, taxonomic and dietary aspects of the Primate dentition, detecting hominid origins; modern human odontology: genetics, pathology, forensic analysis. Much laboratory activity with materials.

455B-3 Laboratory Methods. Osteological and /or biochemical methods for conducting the "forensic protocol": Bone ID, measurement, time since death, age at death, ancestry, stature, sex, pathological and genetic methods of "individuation", Minimum Number of Individuals, etc.

455C-3 Primate Behavior and Ecology. Advanced study of the behavior and ecology of living nonhuman primates. The course will cover the geographic distribution and basic ecological features of nonhuman primates and the relationships between resource distribution, social organization, mating system and behavior which will help to reconstruct the evolution of nonhuman and human primate sociality.

455D-3 Quantitative Methods. Classic inferential statistics as well as resampling approaches and pattern recognition philosophy: chi square, t test, ANOVA, correlation and regression, nonparametric versus parametric methods, multiple regression, all involving diverse anthropological data examples. This course in combination with Ed. Psych 506 or other approved substitute satisfies a doctoral tool requirement. Does not count as a bioanthropology elective toward the M.A. degree.

455E-3 Biomedical Anthropology. Biological disorders and maladaptation in the human species. Major themes include epidemiological methods, the modern Epidemiological Transition to "Western" disease patterns, other transitions resulting from "discordant adaptation" diet, the relation to sociomedical anthropology, and the evolution of human disease (including osteological paleopathology) from Paleolithic to industrialized contexts.

455F-3 Nutritional Anthropology. The anthropological investigation of diet and nutrition in past and present human populations. This course investigates the diets of our human ancestors, human food revolutions, methods used to evaluate diet and nutrition in past human populations, and contemporary issues in food production and distribution.

455G-3 Primate Biology and Evolution. Advanced study of primate biology, evolution, and systematics, with special emphasis on primate functional anatomy and dentition. The course will cover the taxonomy of primates, the evolution of the primate radiation and primate origins, and biological features which elucidate primate relationships and help to reconstruct behavior and ecology of extinct primates.

455H-3 Osteology. This lab-based course is for the advanced student interested in the analysis of the human skeleton. An intensive study of human skeletal anatomy, the methods used in the identification and analysis of skeletal remains in archaeological contexts, and osteological evidence for disease, diet, and trauma in past populations.

455I-3 Comparative and Functional Primate Anatomy. Advanced study of the functional anatomy of primates with a strong emphasis on primate osteology. The course will compare biology of living primates, including humans, to elucidate adaptations in anatomy of nonhuman primates

and to better understand the origins and specific anatomical adaptations in the human lineage.

460-1 to 12 Individual Study in Anthropology. Guided research on anthropological problems. The academic work may be done on campus or in conjunction with approved off-campus (normally field research) activities.

470-3 to 27 (3 per topic) People and Cultures. A survey of the prehistory, cultural history, and modern cultures of peoples in the geographic area in question. Area focus differs from course to course and semester to semester. (a) Africa, (c) Caribbean, (d) Europe, (e) South America, (f) Middle East and North Africa, (g) North America, (i) Mesoamerica. (j) Andes. (Same as Anthropology 310J), (k) Native Peoples-Southwest.

484-3 to 9 Internship: Curation of Archaeological Collections. This internship is intended to give students in anthropology or the museum studies program an introduction to the curation and management of archaeological collections. Students will learn various aspects of collections management through hands-on work at the Center for Archaeological Investigations' (CAI) curation facility. The CAI currently curates collections from the American Midwest, Southwest and Micronesia. Students will also be exposed to a variety of issues that affect local, state and national curation facilities such as conservation/preservation, pest management, storage collection accessibility, accountability, curation policies and ethical concerns. Internship projects range from collections documentation and research to object digitalization and other special curation projects. Prior approval by the instructor is required in order to register for this internship.

485-3 Special Topics in Anthropology. Selected advanced topics in anthropology. Topics vary and are announced in advance. May be repeated as the topic varies. Prerequisite: departmental approval.

490-3 Field Methods and Analysis in Linguistic Anthropology. Includes theoretical background and a project in the linguistic aspects of culture. Prerequisite: 240b or consent of instructor.

495-3 to 8 Ethnographic Field School. Apprentice training in the field in ethnographic theory and method. Students will be expected to devote full time to the field school. Prerequisite: consent of instructor.

496-1 to 12 Field School in Archaeology. Apprentice training in the field in archaeological method and theory. Students will be expected to be in full-time residence at the field school headquarters off campus. Prerequisite: consent of instructor.

497-3 to 6 Field School in Bioarchaeology. This course offers training in archeological field techniques related to the excavation and analysis of human skeletal remains. Students are expected to be in full-time residence at the field school site, which may involve international travel. Offered during the summer. Prerequisite: Consent of instructor.

500A-3 Theory and Method in Biological Anthropology. Current topics in biological evolution and variation, including the theoretical and methodological background to each. Topics will be drawn from the four major areas of physical anthropology: genetics and evolutionary theory, primate studies, human fossil record and human variation. Restricted to: Permission of instructor.

500B-3 Theory and Method in Linguistic Anthropology. Overview to enable students to identify, describe and understand the theories, methods and goals of linguistic anthropology. Emphasis is placed on the relationships of language to culture and cognition from an anthropological perspective. Topics include language origins, descriptive linguistics, language and cognition, synchronic and diachronic variation, language in cultural context, discourse and pragmatics, writing systems and literacy. Restricted to: Permission of instructor.

500C-3 Theory and Method in Archaeology. Overview of the currents and controversies in anthropological archaeology in their historical and theoretical context. Topics include history of archaeological theory, explanation in archaeology, limitations of the archaeological record and archaeological approaches to the study of cultural variation. Restricted to: Permission of instructor.

500D-3 Theory and Methods in Sociocultural Anthropology. This course is designed to enable students to identify, define and critically understand the major theories and methods of contemporary sociocultural anthropology. The course is organized into three general parts, reflecting broad areas of theoretical inquiry which have expanded most rapidly in anthropology since 1960: (1) ecological, economic and other materialist approaches; (2) cognitive, symbolic and other interpretive approaches; and (3) recent and ongoing research strategies, including critical and historical approaches. Restricted to: Permission of instructor.

500E-3 History of Anthropological Theory. Covers history of pre-20th century social theory and a survey of 20th century theories in socio-cultural anthropology. Topics include: Enlightenment social theory, social evolutionism, racial formalism, and the Boasian critique, relativism and functionalism; cultural materialism, cultural ecology, neo-evolutionism, ecological anthropology, structuralism, ethnohistory, interpretive anthropology, practice theory, post-modernism, and gender theory. Restricted to: Permission of instructor.

501-(3-6, 3 per semester) Practicum in Educational Anthropology. Provides anthropology students actual classroom experience in a lower division anthropology course. Students will be involved in the teaching of designated courses. The instructor of record will meet with practicum members on a regular basis, critique their lectures, and together with them work out problems and plan future direction of the course. Graded S/U only. Restricted to anthropology doctoral students only.

510-3 to 9 (3 per topic) Seminar Archaeology of North America. Seminar studying issues concerning the prehistoric and historic inhabitants of North America north of Mexico. From year to year, the precise areal and topical coverage will vary, as will the instructors. Students should consult department about subjects to be offered.

511-2 to 9 (2 to 3 per topic) Seminar in Meso-American Archaeology. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

513-3 to 9 (3 per topic) Seminar in Archaeology. Seminars in varying topics in archaeology. Students should consult department about subjects to be covered.

514-3 to 9 (3 per topic) Seminar in South American Archaeology. Seminar will focus upon archaeological investigations of specific cultures, regions, time periods or cultural processes in South America. From year to year the areal and topical coverage of the course will vary, as may the instructor. Students should consult the department about subjects to be covered. Prerequisite: 430f, 500c, 500d or 500e or consent of instructor.

515A-3 to 9 (3 per topic) Seminar in Social-Cultural Anthropology. Advanced seminar on theoretical perspectives in the social sciences and humanities. Topical focus will vary from year-to-year. Course may be taken again as topics vary. Extensive readings are drawn from a wide range of sources.

515B-3 to 9 Seminar in Social-Cultural Anthropology. Intensive analysis of a limited set of monographs organized around a theoretical problem or set of problems.

516-3 to 9 (3 per topic) Seminar in the Archaeology of Complex Societies. Seminar reviews selective literatures dealing with theoretical and methodological issues in archaeological investigation of pre-industrial, regional complex societies. From year to year the topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be offered. Prerequisite: 500c, 500d or 500e; or consent of the instructor.

520-2 to 6 (2 to 3 per topic) Seminar in New World Ethnology. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

521-2 to 6 (2 to 3 per topic) Seminar in Ethnology of Latin America. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

522-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Oceania. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

523-2 to 6 (2 to 3 per topic) Seminar in Anthropology of Africa. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

527-3 Seminar in Gender. An advanced seminar in anthropological approaches to gender. Theoretical and topical approaches will vary from semester to semester. In any given semester topics may include: power, agency, ethnographies of gender, the construction of masculinity/femininity, gender diversity, gender and the state, gender and everyday. Prerequisite: 500D or consent of instructor.

528-3 Seminar in Culture and Materiality. An advanced seminar in anthropological approaches to culture and materiality. Theoretical and topical approaches will vary depending on the instructor and semester. In any given semester topics may include: human and non-human agency, the social and the technological, science studies, production and consumption, human-environment relations, the role of the senses in culture, and knowledge, skill and practice. Prerequisite: 500D or consent of instructor.

530-3 to 9 (3 per topic) Seminar in Paleoanthropology. Topics will be drawn from any dealing with the fossil and/or contextual evidence for human evolution (e.g., *The Place of Neandertals in Human Evolution; Taphonomy and Paleoecology; Origins of Bipedalism*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

531-3 to 9 Seminar in Bioarchaeology. Seminars will focus on theoretical and methodological issues relating to the excavation and analysis of human skeletal remains. From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

532-3 to 9 (3 per topic) Seminar in Human Biological Variation. Topics will be drawn from any of the areas of biological variation among humans (e.g., *Comparative Epidemiology, Human Sociobiology, Demography and Paleodemography, or Multivariate Pattern Recognition*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

534-3 to 9 (3 per topic) Seminar in Evolutionary Theory. Seminars will be constructed around various theoretical and/or substantive issues in current biological evolutionary theory (e.g., *Issues in Paleobiology, Evolution At and Above the Species Level or Phylogenetic Systematics*). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

536-3 to 9 (3 per topic) Seminar in Primate Behavior and Ecology. Topics will vary among theoretical and substantive issues in primate behavior and ecology (e.g.,

Primate Social Structure, Socioecology, Diet, Locomotion and Foraging Strategies, or Reproductive Strategies in Primates). From semester to semester, the topical coverage will vary, as will the instructor. Students should consult the department about subjects to be covered.

538-3 to 9 (3 per topic) Seminar in Primate Evolution. Topics will vary among substantive (taxonomic), theoretical, and contextual issues in primate evolution (e.g., *Catarrhine Evolution, Anthropoid Origins, Molecular vs. Fossil Evidence for Hominoid Phylogeny or The Role of Body Size and Allometry in Primate Evolution*). From semester to semester, the topical coverage will vary, as will instructor. Students should consult the department about subjects to be covered.

544-3 Discourse Analysis. (Same as Linguistics 544) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis and critical discourse analysis. Prerequisite: ANTH 500B or LING 505.

545-2 to 6 (2 to 3 per topic) Seminar in Anthropological Linguistics. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

551-3 Pragmatics. (Same as Linguistics 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: ANTH 500B or LING 505.

554-1 to 4 (1 per semester) Evolution Seminar. Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format with group discussions and student presentations. Graded S/U. Prerequisite: consent of instructor.

556-3 Phylogenetics {Same as MBMB 556, PLB 556, and ZOO 556}. An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Prerequisite: consent of instructor.

560-2 to 6 (2 to 3 per topic) Seminar in Comparative Social Organization. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

562-2 to 6 (2 to 3 per topic) Seminar in the Anthropology of Contemporary Peoples. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

565-2 to 6 (2 to 3 per topic) Seminar in Culture Change and Development. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

567-2 to 6 (2 to 3 per topic) Seminar in Anthropological Theory and Method. From year to year, the areal and topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be covered.

568-3 to 12 (3 per topic) Seminar in Analytical Methods in Archaeology. Seminar in definition, measurement and description of data in relation to archaeological research problems. From year to year, the topical coverage of this course will vary, as will the instructors. Students should consult the department about subjects to be offered. Prerequisite: permission of instructor.

576-2 to 6 (2 to 3 per topic) Seminar in Anthropological Research Design. Supervised training in the preparation of anthropological research designs. Requirements will include completed research proposals involving the relation of data to theory and results in the general sub-areas of archaeological, physical, social and linguistic anthropology. Coverage will vary. Students should consult the department.

580-1 Current Topics in Evolution. (Same as Zoology 580, Molecular Biology, Microbiology and Biochemistry 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate.

581-2 to 6 (2 to 3 per topic) Seminar in Anthropology. From year to year, the areal and topical coverage of this course will vary, as will the instructor. Students should consult the department about subjects to be covered.

585-1 to 12 (1 to 3 per semester) Readings in Anthropology. Guided readings to cover special topics and fill gaps in the student's specialized anthropological background in preparation for Ph.D. candidacy examination, to be arranged with department. Graded S/U. Prerequisite: restricted to doctoral students only. Permission of instructor required.

589A-1 Anthropology for Graduate Students at SIUC. Taught in the fall semester, is an introduction to faculty, programs, requirements and resources in the Department of Anthropology at SIUC. Expected of all new M.A. and Ph.D. students for first year. One hour per week. Prerequisite: acceptance into anthropology graduate program. Does not count toward M.A./Ph.D. credit hour requirements. Graded S/U only.

589B-1 Introduction to Anthropological Research. Taught in the spring semester, is an introduction to anthropological research with an emphasis on initiating a thesis/dissertation topic. Expected of all new M.A. and Ph.D. students for first year. One hour per week. Prerequisite: acceptance into anthropology graduate program. Does not count toward M.A./Ph.D. credit hour requirements. Graded S/U only.

590-3 Internship. This provides a supervised experience in a professional setting, generally entailing supervisory, editorial, and/or administrative duties. Prerequisite: consent of instructor.

595-3-6 Field Methods in Ethnology. Anthropological methods of inquiry and documentation of cultures and habitat together with appropriate instruction in the technique of field work such as photography and sound recording. Restriction: Permission of instructor.

596-6 to 18 Advanced Field Methods in Archaeology. Advanced, hands-on training in the field in archaeological method and theory. Graduate students will have extended training in supervisory and documentation tasks and roles, in addition to other field training. Students will be expected to be in residence at the field school headquarters off campus for the entire season. Prerequisite: ANTH 496 or consent of instructor.

597-1 to 12 Fieldwork in Anthropology. To be arranged with department. Graded S/U only.

598-1 to 9 Accelerated Thesis. This course is restricted to students to be accelerated from the M.A. to the Ph.D. program (at the discretion of the faculty). Its purpose is to allow the student, under the guidance of his/her major advisor, to complete the research paper and other requirements of an M.A. degree. Graded S/U only. Prerequisite: Consent of department and departmental offer of accelerated entry to Ph.D. program in Anthropology.

599-1 to 9 Thesis. Restricted to: Permission of instructor.

600-1 to 32 (1 to 12 per semester) Dissertation. Restricted to: Permission of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

APPLIED LINGUISTICS

(See Linguistics for program description.)

ARCHITECTURE

[http://architecture.siu.edu/
jdobbins@siu.edu](http://architecture.siu.edu/jdobbins@siu.edu)

COLLEGE OF APPLIED SCIENCES AND ARTS

Graduate Faculty:

Anz, Craig K., Assistant Professor, M. Arch, University of Texas at Arlington, 1991; 2004.

Brazley, Michael D., Assistant Professor, Ph.D., University of Louisville, 2002; 2004.

Davey, Jon, Professor, M.S., Southern Illinois University Carbondale, 1987; 1981.

Dobbins, John, Associate Professor and *Head*, Master of Architecture program, M. Arch., M. B. A., University of Illinois, 1986; 1995.

Kidd, Laura K., Associate Professor, Ph.D., Iowa State University, 1994; 1996.

Kremers, Jack, Professor, M. Arch., University of Michigan, 1966; 2006.

LaGarce, Melinda, Associate Professor, M.F.A., Texas Technology University, 1972; 1989.

McPeck, K. Thomas, Assistant Professor, M. Arch, Texas A&M University, 1997; 2007

Owens, Terry, Associate Professor and *Interim Dean*, M.S. Ed., Southern Illinois University Carbondale, 1984; 1986.

Poggas, Christy, Assistant Professor, M.S. Ed., Southern Illinois University Carbondale, 1990. B.Arch., University of Arizona, 1975; 2003.

Smith, Peter B., Assistant Professor, M. Arch., University of Illinois, 1980; 2001.

Studak, Cathryn, Associate Professor, Ph.D., Texas Woman's University, 1993; 2000.

Swenson, Robert, Associate Professor, M. Arch., Yale University, 1969; 1999.

Vera, Maria Del C., Assistant Professor, M. Arch and Urban Studies, Universitat Politècnica de Catalunya, 2006; 2007.

Wendler, Walter V., Professor and *Director*, Ph.D., University of Texas, 1991, M. Arch., University of California, Berkley, 1975; 2001.

Wessel, Stewart P., Associate Professor, M.F.A., University of North Texas, 1992; 1996.

White, David, Associate Professor, M. Arch, Southern Illinois University Carbondale, 1991; 1998.

Workman, Jane, Professor, Ph.D., Purdue University, 1982; 1989.

Yeshayahu, Shai, Assistant Professor, M. Arch, The Ohio State University, 1996; 2004.

Master of Architecture

The Master of Architecture degree is a first professional degree intended for individuals who have completed a pre-professional undergraduate degree in architecture or architectural studies and requires a minimum of 42 semester hours that can be completed over a 15 month period including a summer, fall, spring and summer semester sequence.

The core of the architecture program is the design studio. In the Graduate program students are exposed to concentrations in community and regional design, technology, theory and building design. Students are required to take advanced courses in research methods, programming and professional practice. Students receive a rigorous and demanding education that will prepare them for a variety of architectural intern positions.

The focus of the program will develop through the:

- Traditional program strength in technological innovation and practice connected to architectural theory.
- Service and discovery related to the regional and global culture and environment as a unique model and framework for the study of architecture.

- Investigation of the work and legacy of R. Buckminster at Southern Illinois University as it impacts twenty-first century architecture.

The entire undergraduate and graduate curriculum is designed to fulfill National Architectural Accrediting Board (NAAB) requirements and conditions for a professional degree in architecture. This accreditation is currently being sought. When fully accredited, the Master of Architecture degree should satisfy the educational requirements for licensing in the state of Illinois as well as the National Council of Architectural Registration Boards (NCARB) certification and licensing in many other states.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the

Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Master's degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

The NAAB grants candidacy status to new programs that have developed viable plans for achieving initial accreditation. Candidacy status indicates that a program should be accredited within 6 years of achieving candidacy, if its plan is properly implemented.

NAAB Conditions for Accreditation, p A-1

Accreditation is retroactive for the two years preceding the accreditation date. The scheduled goal is to achieve accreditation effective January 1, 2010. Thus, any class graduating after January 1, 2008 will have earned an accredited degree.

Vision and Mission

The SIUC architecture graduate program invites students to unleash their potential and join in the exploration, development, and creation of architecture in the heartland of America. It is our vision to be an architectural program of excellence built upon the cultural and environmental heritage of the Southern Illinois region that provides a superior education and produces the highest quality architectural scholarship and research to serve our global communities.

Through our cultural heritage, environmental context and the tradition of integrating emerging technology and innovative practice, the mission of the architecture faculty and students is to explore, create, and develop architecture as a synthesis of design excellence, artistic expression, technology and community involvement.

Goals

- Our graduates are lifelong learners, leading citizens and professionals in communities throughout the world.
- We provide for the development of individual creativity through the expression of human, social and environmental values.
- We serve our communities through problem solving and creative efforts in the addressing of regional issues.

- We seek to fulfill the vision expressed by Ernest Boyer and Lee Mitgang in Building Community to:
 - Produce architecture that enhances the quality of life of our communities, serves the needs of clients, uplifts the human spirit, preserves the environment, provides social justice and expands aesthetic frontiers.
 - Pursue the scholarship of discovery, integration, application and teaching
 - Provide a curriculum that is liberal, flexible and integrated both within the discipline of architecture and in connections with other disciplines in the design-build process.

Mission Requirements and Procedures

A complete application consists of:

- (1) The Master of Architecture application form
- (2) Graduate School application
- (3) Application fee of \$50.00
- (4) Portfolio
 - Examples of work should include design studio work, professional presentation drawings, and any related expressions that demonstrate the applicant's design and communication abilities. Professional work should include a statement from the employer stating the role of the applicant in the process and product of the work.
 - Preferred sizes: (8 ½" x 11") or (11" x 17")
 - Maximum number of pages: 25
 - Maximum weight: 16 ounces
 - Covers and binding: simple and easy to read
 - Portfolios will be returned by mail to the applicant if a self-addressed stamped envelope is provided and the weight is 16 ounces or less. Portfolios will be held for pick-up for two months after a letter of notifying the applicant of the decision has been mailed. After two months, portfolios not retrieved will be discarded.
- (5) Three letters of recommendation
- (6) Official transcripts from all institutions attended
- (7) Statement of purpose expressing academic and professional career goals and plans

International applicants also need to supply TOEFL (Test of English as a Foreign Language) scores that satisfy the Graduate School requirements and Certification of Finances for Admission to the Graduate College.

Graduate Record Examination (GRE) is not required for the Master of Architecture Program. However, many scholarship and fellowship opportunities do require the GRE. Applicants are encouraged to submit test scores.

Application materials are reviewed by the faculty of the School of Architecture. Each submission is evaluated individually and the decisions are based upon the quality of

the portfolio, the strength of the academic record, the letters of recommendation, professional experience and the commitment and clarity expressed in the letter of intent.

Contact::

John K. Dobbins, Architect
 Assoc. Professor and Head, Master of Architecture program
 875 South Normal
 413 Quigley Hall, MC 4337
 Southern Illinois University Carbondale
 Carbondale IL 62901
 618-453-3734
 Fax: 618-453-1129
 jdobbins@siu.edu

Curriculum Guide

The curriculum has been created to provide a superior architectural education and satisfy NAAB "Student Performance Requirements". All applications will be reviewed to ascertain fulfillment of the educational criteria of the SIU undergraduate program. Any deficiencies will be defined upon acceptance into the program as well as the necessary course requirements to eliminate those deficiencies. Those requirements must be fulfilled prior to completion of the Master of Architecture degree.

The graduate curriculum consists of 42 semester credit hours which must be completed prior to awarding of the Master of Architecture degree.

Summer I Semester:

ARC 550: Regional Architecture Studio 6

TOTAL 6

Fall Semester:

ARC 500-3: Research Methods and Programming 3

ARC 541-3: Arch. Systems & the Environment 3

ARC 551-6 Comprehensive Architecture Design Studio 6

ARC 591-3: Architectural Professional Practice I 3

TOTAL 15

Spring Semester:

ARC532-3: Architectural History III:
 Non-Western Architecture 3

ARC 552-6: Graduate Architectural Design Thesis I 3

ARC 592-3: Architectural Professional Practice II 6

Elective 3

TOTAL 15

Summer II Semester

ARC 554-6: Design/Thesis II –or– 6

ARC 593-6: Architectural Research Paper –or– 6

ARC 599-6: Thesis 6

TOTAL 6

Courses (ARC)

500-3 Research Methods and Programming. The foundational study of research methods and programming that serve architectural studies. This course investigates the co-application of multiple methodologies for the development of research topics and architectural programs. The conclusion of the course is the definition of an individual thesis project to be completed in the Graduate Program. Prerequisites: Enrollment in the M. Arch. Program & 550.

501-3 Seminar: Architectural Theory. Seminar devoted to the teaching, investigation and discussion of contemporary architectural issues related to theory. Students have the opportunity to explore a variety of subjects through assigned readings and investigations.

502-3 Architecture Seminar. Study of current trends and topics in architecture. Assigned readings and investigations are completed on approved topics chosen by the student. Students have the option of completing in situ study during the course.

503-3 Environmental Behavior Studies in Architecture. This seminar introduces students of architecture to environmental behavior studies. The course deals with the complex relationships between people and their physical, social, and cultural environments. Students are introduced to common core of theories and methods rooted in the environmental design professions, social and physical sciences, and the humanities.

531-3 Seminar: Architectural History. A seminar devoted to the teaching, investigation and discussion of the history of architecture. Students have the opportunity to investigate historical precedents and the context within which these ideas have developed. The connection to the contemporary architectural setting and current concepts will be developed and discussed.

532-3 Architectural History III: Non-Western Architecture. Seminar to discuss architecture beyond the tradition of Western civilization. Focus is upon the architecture of Asia, the Middle East and North America. Primitive, pre-industrial vernacular as well as cultural specific high style architecture is included. The course format is: lectures, assigned reading, class discussion and individual research reports.

541-3 Architectural Systems and the Environment. Provides an overview of building technology and systems and the role of building systems performance in providing architectural and human environments and their subsequent impact upon the natural environment. The course builds upon the philosophical ideas of sustainable design and resource consumption tools. Prerequisite: Enrollment in M. Arch. Program & 550. Concurrent enrollment in 551 is required.

550-6 Regional Architecture Studio. Architectural Design Studio focused upon regional architecture and planning. The studio will address the local issues and build upon the

local cultural and design traditions. Prerequisite: Enrollment in M. Arch. program.

551-6 Comprehensive Architecture Design Studio. Arch. design studio focused upon comprehensive design of a large-scale urban building as fulfillment of the total integration of architectural systems and design criteria. This course serves as the culmination of the fulfillment of student performance criteria through the integration of all major building and urban systems while addressing the current human, social, and environmental issues. Prerequisite: Enrollment in M. Arch. Program & 550. Concurrent enrollment in 541 required.

552-6 Graduate Architectural Design/Thesis I. Initial development of individual design thesis project in a studio setting. The studio will consist of design project or an individual student thesis project as developed in ARC 500-3. Approval of thesis project by graduate faculty is required. Graded S/U only. Prerequisite: Enrollment in M. Arch. Program, 500 & 551.

554- 6 Graduate Architectural Design/Thesis III. A continuation of ARC 552 in the conclusion, presentation and final approval of the individual design/thesis project in a studio setting. This course is taken by students who wish to graduate through the department. Prerequisite: 552.

570-3 Architectural Visualization. This course is designed to give the student a fundamental understanding of the practices of 3D architectural modeling and visualization. Themes emphasized are: 3D modeling; still frame rendering; animation production; image editing and post productive. Prerequisite: Enrollment in M. Arch. Program.

591-3 Architectural Professional Practice I. Introduction to the organization, management, and practice of architecture as a business and profession. Emphasis is placed on the range of services provided, professional ethics, business management, marketing, contacts, and negotiations, design cost analysis/controls, and other aspects of professional practice. Prerequisite: Enrollment in M. Arch. Program.

592-3 Architectural Professional Practice II. The development of the study and discussion of architectural professional practice issues including leadership, legal responsibilities, ethics and professional judgment. Prerequisite: Enrollment in M. Arch. Program & 591.

593-6 Architectural Research Paper. This course is for students who wish to perform individual research in architecture on an approved topic. Prerequisite: Enrollment in M. Arch. Program & 552.

599-6 Thesis. Graded S/U or DEF only. Prerequisite: Enrollment in M. Arch. Program & 552.

601-1 Continuing Enrollment. For Graduate students who have not finished their Master of Architecture Program and are in the process of completing their thesis or capstone project course (ARC 554). The student must have completed all other course requirements to be eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Prerequisites: Completion of other course work.

ART

www.artanddesign.siu.edu/
vlbrooks@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Abdul-Musawwir, Najjar, Associate Professor, M.F.A., Southern Illinois University Carbondale, 1997, painting.
Abrahamson, Roy E., Associate Professor, *Emeritus*, Ed.D., Columbia University, 1965; 1965.
Addington, Aldon M., Associate Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1966; 1967.
Archer, Richard, Assistant Professor, *Emeritus*, M.S., Governor's State University, 1979; 1968.
Belletire, Steven P., Professor, B.F.A., University of Illinois, Champaign, 1971; 1997. Industrial design.
Bernstein, Lawrence A., Associate Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1953; 1962.
Bickel, Barbara., Assistant Professor, Ph. D., The University of British Columbia, 2008; Art Education
Boysen, Bill H., Professor, *Emeritus*, M.F.A., University of Wisconsin, 1966; 1966.
Briggs, Larry S., Associate Professor, *Emeritus*, B.F.A., University of Oklahoma, 1956; 1985.
Busch, Larry, Associate Professor, *Emeritus*, M.S., Southern Illinois University Carbondale, 1970; 1970.
Chalmers, Pattie, Assistant Professor, M.F.A., University of Minnesota, 2001; 2006. Ceramics.
Chametzky, Peter M., Professor and *Director*, Ph.D., University of New York, 1991; 1998. Art history, 20th century art, German art, modern and contemporary art.
Deller, Harris, Professor, M.F.A., Cranbrook Academy of Art, 1973; 1975. Ceramics.
Feldman, Joel B., Professor, *Emeritus*, M.F.A., Indiana University, 1967; 1973.
Gertsman, Elina, Assistant Professor, Ph.D., Boston University, 2004; 2005. Art History.
Gorman, Carma R., Associate Professor, Ph.D., University of California at Berkeley, 1998; 1998. Art history, history of design, American art.
Gradle, Sally A., Assistant Professor, Ed.D., University of Illinois, Urbana-Champaign, 2004; 2005. Art Education.
Greenfield, Sylvia R., Professor, *Emerita*, M.F.A., University of Colorado, 1967; 1968.
Kim, Sun Kyoung, Assistant Professor, M.F.A., University of Illinois, 2007; 2008.
Kington, L. Brent, Professor, *Emeritus*, M.F.A., Cranbrook Academy of Art, 1961; 1961.

Lee, Jiyong, Assistant Professor, M.F.A., Rochester Institute of Technology, 2001; 2005. Glass.
Lintault, M. Joan, Professor, *Emerita*, M.F.A., Southern Illinois University Carbondale, 1962; 1973.
Lopez, Alex, Assistant Professor, M.F.A., Alfred University, 1998; 2006. 3-D foundations/sculpture.
Lopez, Robert Anthony, Assistant Professor, M.F.A., University of Illinois, Urbana-Champaign, 2000; 2009. Industrial Design.
Mavigliano, George J., Associate Professor, *Emeritus*, M.A., Northern Illinois University, 1967; 1970.
Mawdsley, Richard W., Professor, *Emeritus*, M.F.A., University of Kansas, 1969; 1978.
Monteith, Jerry, Professor, M.F.A., Cranbrook Academy of Art, 1978; 1990. Sculpture.
Onken, Michael O., Associate Professor, *Emeritus*, M.A., Northern Illinois University, 1966; 1968.
Palmer, Erin L., Associate Professor, M.F.A., Yale University, 1993, drawing and painting.
Paulson, Robert L., Professor, *Emeritus*, M.F.A., University of Wisconsin, 1967; 1967.
Pease, Mark, Assistant Professor, M.F.A., University of Pennsylvania, 2003; 2009.
Shang, Xuhong, Professor, M.F.A., Tyler School of Art, Temple University, 1992, painting.
Shay, Edward H., Professor, *Emeritus*, M.F.A., University of Illinois, 1971.
Sloboda, Stacey L., Assistant Professor, Ph.D., University of Southern California, 2004; 2005. Art History.
Smith, Richard E., Associate Professor, M.F.A., Southern Illinois University Carbondale, 1992; 1998. Metalsmithing.
Sullivan, James E., Associate Professor, *Emeritus*, M.A., University of California, Los Angeles, 1965; 1969.
Sullivan, Milton F., Professor, *Emeritus*, M.A., Columbia University, 1951; 1952.
Walsh, Thomas J., Professor, *Emeritus*, M.F.A., University of Michigan, 1962; 1967.
Youngblood, Michael, Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1975; 1979.
Zivkovich, Kay M. Pick, Professor, M.F.A., Southern Illinois University Carbondale, 1973; 1989. Communication design.

In all of its graduate studio programs, the School of Art and Design strives to maintain a vital, creative ambiance in which emerging artists with strong motivation may develop, through intensive studio practice and appropriate scholarly support, a clear, mature, and professional focus to their creative life. The core of any program is the in-depth studio

practice of individual studio disciplines and frequent, sustained contact with working professional faculty and fellow students. This work is supported and extended through formal studio course work, studies in the history of art, and through access to the many resources and opportunities inherent in a large multi-purpose university

M.F.A. Degree Program Description

The School of Art and Design offers graduate studies leading to the Master of Fine Arts degree with a major in art and offers studies supporting a teaching specialty in art for the Master of Science in Education degree with a major in secondary education. The student is expected to select an area of emphasis (studio or art education), and a program will be planned in consultation with the major professor in that area.

Admission

An undergraduate degree in art or art education, or the equivalent in course work or experience if the undergraduate degree is in another discipline, is required for admission into the Master of Fine Arts degree program. The student must also submit transcripts of all previous undergraduate work, present slides or a portfolio of creative work, and submit letters of recommendation.

In most cases an undergraduate degree in art education is required for admission into the program constituting a teaching specialty in art for the Master of Science in Education degree majoring in secondary education. Any exception to these requirements must be approved by the faculty in the studio or art education fields and by the Director of the School of Art and Design.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Art and Design. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

M.F.A. Degree

A minimum of 60 semester credit hours is required for the Master of Fine Arts degree with a major in art. All hours that are to count toward graduation must have the approval of the student's major adviser in the studio area of emphasis. Students may emphasize the following areas in studio: drawing, painting, printmaking, sculpture, ceramics, glass, and metalsmithing/blacksmithing. The length of time required to complete a 60 semester-hour program is usually 5–6 semesters or three academic years. Most graduate students are in residence for at least 46 semesters. Programs of residency must have the approval of the student's major adviser. Required hours are distributed as follows: 26 hours in the primary studio emphasis, 12 hours in art history or related subjects, 6 hours in thesis or terminal project work, and 16 hours of elective study of which 9 hours must be in studio disciplines. The remaining hours may be elected from any area within the School of Art and Design or in the University at large.

In addition to the completion of course work, all candidates for the M.F.A. degree must, during the last semester of academic work, present a graduate exhibition,

present a terminal project or a written thesis, and pass an oral examination. The terminal project is a creative activity presented in lieu of the written thesis, and in practice, the graduate exhibition is considered to satisfy the terminal project requirement.

Graduate education in the studio areas of emphasis is expensive, and because of the individual nature of creative work, it is virtually impossible to predict the exact cost for each student. The School of Art and Design provides the faculty and the studio and shop facilities that are necessary to the programs offered, but all other costs, especially materials, that are considered necessary to the successful completion of a graduate program are borne by the student.

Graduate Certificate in Art History

The certificate program in Art History will enable students to develop a broad knowledge of the history of art, become familiar with the discipline's methodology, and acquire training in teaching art history. Graduate students will be able to pursue the certificate program either independently or concurrently with an MFA.

Students enrolled in the certificate program must maintain a GPA of no less than 3.0 in all coursework counting towards the certificate. Maximum time allowed to complete all requirements for the certificate is six years from the date of admission to the program.

Admission

Any student who has completed a bachelor's degree is eligible to apply for admission to the certificate program. Students enrolled in the MFA program may enroll concurrently in the certificate program. They must apply for admission to the program before completing the "major part" of certificate work (50% of credit hours, or 9 hours of art history coursework). Students seeking admission to the certificate program will be required to complete an application form and submit transcripts verifying completion of the bachelor's degree. An application fee of \$20.00 will be assessed to cover administrative costs.

Program Requirements

Students enrolled in the certificate program will be required to complete 21 credit hours of graduate level art history coursework. Of these, 6 credit hours will consist of AD 438, Writing about Art and Design, and AD 537, Teaching Practicum. No independent study (AD 507 Readings in Art History) courses will count towards the certificate coursework requirements. Of the 21 art history credit hours required by the certificate program, 9 can count towards requirements of another graduate degree.

Eligible elective courses:

AD 407 Ancient Art
 AD 417 Medieval Art
 AD 427 Renaissance Art
 AD 437 Baroque and Rococo Art
 AD 447 Introduction to Museology
 AD 448 Art of Tribal Cultures
 AD 457 Women in the Visual Arts
 AD 458 African Arts
 AD 467 Critical Issues in Contemporary Art
 AD 468 Pre-Columbian Art
 AD 477 American Art of the Thirties

AD 478 Topics in American Art
 AD 488 American Folk Art
 AD 497 a-d Problems in Art History
 AD 498 Art Criticism
 AD 517 Concepts in Art History
 AD 527 19th Century European Art
 CP 449 Survey of Film History
 CP 463 Hist. of Experimental Film
 CP 541 History of Photography
 CP 574 Contemporary Theory and Analysis of Cinema
 CP 575 Contemporary Theory and Analysis of Photography

At any time during their enrollment in the certificate program, students will be able to petition the art history faculty to take a comprehensive qualifying exam. The exam will be administered at the end of the Fall and Spring semesters on an "as needed" basis. The test will assess the students' knowledge of art history (pre-history to present), pertinent terms and concepts, and general historical context. It will consist of three parts: slide identification, slide comparison, and a short essay section. A student will have to obtain a passing score on the exam in order to qualify for the Art History Certificate.

Technology Fee

The School of Art and Design assesses all graduate art majors a technology fee of \$6.00 per credit hour; a

maximum of 12 credit hours will be charged for fall & spring semesters and six for summer.

Instructional Support Equipment Fee

The School of Art and Design assesses all graduate art majors an instructional support equipment fee of \$10.00 per credit hour; a maximum of 12 credit hours will be charged each for fall and spring semesters and six for summer.

Courses (AD)

Art studio courses (400-499, 500-598) are directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the major field. Courses in this department may require the purchase of supplemental materials. Permission of the major adviser in each studio is required for enrollment in studio courses

400D-3 to 15 Advanced Drawing I. Independent study in drawing. Studio fee: \$8 per credit hour. Incidental expenses may exceed \$100 for each section. Prerequisite: consent of major adviser.

401D-3 to 15 Advanced Painting I. Independent study in painting. Studio fee: \$5. Incidental expenses may exceed \$100. Prerequisite: consent of major adviser.

402D-3 to 15 Advanced Printmaking I. Independent study in printmaking. Studio fee: \$10 per credit hour. Incidental expenses may exceed \$50. Prerequisite: consent of major adviser.

403D-3 to 15 Advanced Sculpture I. Independent study in sculpture. Studio fee: contingent upon type of materials used by student. Incidental expenses may exceed \$75. Prerequisite: consent of major adviser.

404D-3 to 15 Advanced Ceramics I. Independent study in ceramics. Studio fee: \$27 per credit hour enrolled. Incidental expenses may exceed \$20. Prerequisite: consent of major adviser.

405D-3 to 15 Advanced Metalsmithing I. Independent study in metalsmithing. Studio fee: \$10 per credit hour enrolled. Incidental expenses may exceed \$75. Prerequisite: consent of major adviser.

407-3 to 9 (3 per topic) Ancient Art and Archaeology of Ancient Mediterranean. This course introduces students to art historical, archaeological, and historical approaches to the physical remains of the Ancient Mediterranean. The course can be repeated if offered on different topics in different years. (e.g. ancient Greece. Ancient Rome) The class is occasionally offered overseas. Same as ANTH 430D and CLAS 310.

414D-3 to 15 Advanced Glass I. Independent study in glass. Laboratory fee: \$80 per credit hour enrolled. Prerequisite: for undergraduates, C or better in 404b; for graduates, consent of major adviser.

417-3 Medieval Art. Medieval art from the Fourth to the Fifteenth Century in Western Europe. Examination of selected art objects in terms of media and techniques, iconography, function and cultural milieu. Field trip required. Documented research paper on an aspect of medieval art required for graduate credit. Prerequisite: 207a or consent of the instructor.

427-3 Renaissance Art. This course will introduce students to paintings, sculpture and architecture created in Europe between 1300-1500 for (a) and 1450-1600 for (b).

Works of art produced by Giotto di Bondone, Jan van Eyck, Hieronymus Bosch, Jean Fouquet, Albrecht Durer, Leonardo da Vinci, Michelangelo, Parmigianino, and Pieter Breugel will be considered. (a) Early Renaissance; (b) High Renaissance; (c) Selected topics from the Renaissance period. Prerequisite: 207b.

428-3 Native North American Art. Arts and material culture of traditional Native North American cultures, including the Northeast, Woodland and Mississippian areas, Plains, Southwest, West, Northwest Coast, Arctic and subArctic. Fiber arts, sculpture, architecture, ceramics, metals, beads, role of the arts. St. Louis Art Museum and Cahokia Mounds required field trips.

437-3 18th Century Art. This course examines the art, architecture, and material culture of Europe and the United States from 1680 to 1815. The course will situate Baroque, Rococo, and Neo-Classical styles within their social and philosophical contexts. Prerequisite: Art 207b or c or consent of the instructor.

438-3 Writing About Art and Design. This course seeks to provide undergraduate and graduate students with the skills they need for writing both short critical essays and substantial research papers on the visual arts. It introduces students to basic research methods and to theoretical approaches that inform writing about the arts. The course is required for art history majors and is strongly recommended for incoming graduate students in art. Partially satisfies CoLA's Writing-Across-the-Curriculum requirement. Prerequisite: 207a,b,c or consent of the instructor.

442-3 Interactive Art Media and Process. Explore technologies focusing on participation, audience involvement, and input/output. Tangible computing to create works that are interdisciplinary, installation-based, temporary, physical, performative, and/or public. Studio fee: \$20.

447-3 Introduction to Museology. A survey of museum and gallery techniques (emphasis upon practical exhibit development) which will involve answering questions concerning contractual agreements, taxes, insurance, packing, shipping, exhibit design and installation, record systems, general handling, public relations and sale of art works directed toward problems encountered by the artist outside the privacy of the studio. Prerequisite: art major or consent of instructor.

448-3 Art of Tribal Cultures. Covers a broad range of arts of Africa, Native North America, Pre-Columbian America and Oceania, primarily sculpture, textiles, masking and performance, body decoration and textiles, architecture and ceramics of small-scale village societies.

458-3 African Arts. Covers a broad range of the arts primarily of west and central Africa, as well as north, south, and east Africa: includes sculpture, masking and performance, body decoration and textiles, architecture. Shows how arts are used in the daily life of traditional village societies in these areas.

467-3 Critical Issues in Contemporary Art. An examination of the style and meaning of contemporary art in relation to the current political, social and cultural issues. Will include visual arts, architecture, and communications media. Prerequisite: 207a,b or consent of instructor.

468-3 Pre-Columbian Art. Covers architecture, textiles, pottery, metal and 2-D arts of Meso-, Central and South America during the Pre-Columbian era. Also includes hieroglyphic and calendrical systems and some Post-Columbian era arts as well.

477-3 United States Art of the 1930s. This course situates United States art of the 1930s within the society that produced it, addressing such issues as the Great Depression, gender and race relations, immigration, the farm crisis, social realism, regionalism, labor relations and urbanism. The role that government agencies play in this era will be a particular focus of attention. Media discussed include painting, sculpture, architecture, design, crafts, photography and film. Field trips may be required. Prerequisite: 207c or consent of the instructor.

478-3 Topics in American Art. This course deals with selected topics in the history of both elite and popular art of the Americas, with a focus on the art of the United States. Topics vary, but generally will include the study of architecture, design, crafts, photography and film as well as, or instead of, painting and sculpture. Field trips may be required. Prerequisite: 207c or consent of the instructor.

497-3 to 6 (3 per topic) Problems in Art History. A close examination of selected categories of works of art from various periods, media and cultures as illustrative of particular art historical problems. Topics will vary and include (a) Portraiture. (b) Landscape and still life. (c) Narrative. (d) Other selected topics. Sections a through c may be taken only once each, section d may be repeated as topics vary. Art historical perspectives to include formal analysis, iconography, art theory, social history, connoisseurship. Prerequisite: 300-level art history course or consent of instructor.

498-3 Art Criticism. The course will familiarize students with history, methodology and contemporary practice of art criticism through close reading and comparative analysis of key texts. It will also provide students with writing, critical and analytic skills necessary for writing effective art criticism. Field trip required. Prerequisite: 207 or consent of instructor.

499-1 to 21 Individual Problems. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Designed to adapt to students' individual needs in problem research. Prerequisite: senior standing in the School of Art and Design, a 3.0 average, and consent of instructor.

500-3 to 21 Advanced Drawing II. A studio directed toward individual research in the student's major field. Emphasis is placed upon the historical materials,

processes and ideas that form the content and experience of the student's major field. Studio fee: \$25. Prerequisite: consent of major adviser.

501-3 to 21 Advanced Painting II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Prerequisite: consent of major adviser.

502-3 to 21 Advanced Printmaking II. Advanced studio course in printmaking directed toward individual research in the student's choice of print media. Emphasis is on the processes, which lead to the formation of personal content. Studio fee: \$20 per credit hour enrolled. Prerequisite: graduate status and consent of instructor.

503-3 to 21 Advanced Sculpture II. Advanced studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas to form content in the student's medium. Incidental expenses may exceed \$100. Studio fee: \$20 per credit hour. Prerequisite: consent of major adviser.

504-3 to 21 Advanced Ceramics II. Art studio course directed toward individual research in the student's major field. Coursework is designed to assist the student's discovery of ceramic form and content as applied to personal artistic expression. Emphasis upon the development of creative studio research techniques and seminar-type experiences exploring historical and contemporary issues as they relate to ceramic art. Studio fee: \$55 per credit hour enrolled. Incidental expenses may exceed \$50. Prerequisite: consent of major adviser.

505-3 to 21 Advanced Metalsmithing II. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field. Studio fee: \$20 per credit hour enrolled. Prerequisite: consent of major adviser.

507-3 to 6 (3,3) Readings in Art History. Individual assistance and investigation to discover new meaning and involvement in graduate studio work through the literature of art.

508-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education. Each student demonstrates via class presentations, a term paper, surveys of research reports and formulations of research designs, an understanding of advanced art education research procedures, analyses and implications; new process and product research techniques; and research in artistic creativity, perception, and the evolution of art images. Special approval needed from the instructor.

514-3 to 21 Advanced Glass II. An advanced glass course intended to increase the student's knowledge of the potential of glass as a medium of creative expression and to refine studio skills associated with the material. Coursework will include the investigation of historical and

contemporary solutions to aesthetic problems related to the medium. Studio fee \$80 per credit hour enrolled. Prerequisite: consent of major adviser or consent of instructor.

517-3 to 6 (3,3) Concepts in Art History. Group seminar to discuss and present aspects of the history of art in relation to both traditional and contemporary artistic concerns.

527-3 19th Century European Art. The course will investigate the evolving discourse of modernity in the context of the 19th century European art. It will trace the origins and development of such key modernist ideas as originality, uniqueness, non-conformity, avant-garde, and abstraction. The discussion of specific artistic trends, from Neo-Classicism and Romanticism in the first half of the century to Realism, Impressionism, Post-Impressionism, and Symbolism in the second half, will be framed by examination of the social milieu and the changing conditions of art-making and art-selling. In particular, the course will examine development of privately owned art galleries, shift from academic to studio based art education, as well as growing importance of the city and the urban experience.

537-3 Teaching Practicum in Art History. Introduce student to pedagogical methods relevant to teaching art history. Students enrolled in the practicum will serve under the close supervision of the art history faculty as discussion leaders for one section of the Art and Design 207 sequence. Practicum students will attend the Art and Design 207 lectures and participate in a weekly teaching workshop, which will address topics such as the development of course syllabi and assignments, grading criteria, classroom policies and teaching strategies. Prerequisite: Art History certificate program and/or instructor consent.

547-3 Survey of 20th Century Art. A survey of the major developments in painting, sculpture, architecture and other areas of the visual arts from the late 19th century to the end of the 20th. These developments are studied in relation to other significant cultural, political, scientific and philosophical events and ideas. (a) covers late 19th to mid-20th century art and culture. (b) covers the middle to the end of the 20th century.

548-2 to 9 (2 to 3, 2 to 3, 2 to 3) Research in Art Education. Designed to prepare teacher candidates to work with elementary learners by utilizing artistic inquiry to understand and produce art. Activities built around enduring ideas, issues, and themes that are important to the elementary learner. Observing and writing about children's artistic development, compiling good resources and lesson plans, and developing the ability to reflect on growth in teaching. Studio production and application of instructional methods through participation in service learning provide experiential knowledge forming a basis for understanding children and their art making. Studio fee: \$45. Prerequisite: AD 219 or concurrent enrollment.

557-3 to 9 (3 per topic) Topics in Design History, Theory and Criticism. This course addresses selected topics in the history, theory and criticism of design. Students enrolled in the course will write a substantial problem-based research paper on a topic chosen in consultation with the instructor and take a final exam that tests their research skills and grasp of major themes of the course. (a) History, Theory and Criticism of Graphic Design. (b) History, Theory and Criticism of Industrial Design. (c) other selected topics.

558-2 to 9 (2 to 3, 2 to 3, 2 to 3) Seminar in Art Education. Organize art resources, materials, and concepts into effective learning experiences. Focus on integrating concepts from art history, aesthetics, and criticism with studio methods and techniques along with technological approaches. Effective assessment strategies to complement the curricular structures developed. ed *S/U* or *DEF* only.

Extensive reading, investigation of research problem, development of a curriculum document, and presentation of research findings.

599-2 to 6 Thesis. Art studio course directed toward individual research in the student's major field. Emphasis is placed upon the history, materials, processes and ideas that form the content and experience of the student's major field.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Grad

BEHAVIOR ANALYSIS AND THERAPY

(See Rehabilitation Institute for program description.)

BIOLOGICAL SCIENCES

<http://www.biologicalsciences.siu.edu/>

COLLEGE OF SCIENCE

The biological sciences program provides broad interdisciplinary graduate training in biology leading to the Master of Science degree. This interdisciplinary program utilizes the faculty, facilities and courses of the Departments of Microbiology, Physiology, Plant Biology and Zoology. The program is designed for those students who desire a broad-based curriculum rather than an in-depth concentration in only one of the biological sciences.

Requirements for Admission

All applicants must submit an application to the biological sciences program. Applicants must meet the minimal requirements of the Graduate School before being considered for admission to Biological Sciences. A completed application includes the program application form, three letters of recommendation, transcripts of all previous college credit, and scores from the general aptitude portion of the Graduate Record Examination (GRE).

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Biological Sciences. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Prerequisites for graduate training in the biological sciences program include a bachelor's degree with the following academic background.

1. 37 semester hours of undergraduate courses distributed among any three of the biological science areas (plant biology, microbiology, physiology and zoology).
2. Organic chemistry with laboratory.
3. Physics.
4. Statistics.

(NOTE: Applicants deficient in these background areas may be admitted, but any deficiency must be successfully completed before the third semester of registration in the program.) Application forms are available from: Director, Biological Sciences Program, SIUC, Mail Code 4403, Carbondale, IL 62901-6505.

Advisement

After admission to the program, a student must consult the director of the biological sciences program for counsel and assistance prior to registration.

No later than the end of the first semester of registration in the program, the student must arrange with a faculty member of one of the four biological science departments to serve as the research adviser.

Following selection and approval of the research adviser, a research and advisory committee is to be recommended

to the director of the biological sciences program for approval by the dean of the Graduate School. The research and advisory committee shall consist of a minimum of three members, each representing a different biological science department, with the research adviser serving as chair. The director of the biological sciences program serves as an *ex-officio* member of all committees.

A program of course work must be approved by the research and advisory committee and filed with the director no later than the eighth week of the second semester of registration in the program. Any deviation from the course work program during the student's tenure must be approved by the research and advisory committee and filed with the director. The research plan for the thesis or research paper must be approved by the research and advisory committee and filed with the director no later than the end of the second semester of registration.

Non-Thesis Option

A total of 40 semester hours of 400- or 500-level courses is required with the following provisions:

1. A minimum of 26 semester hours of formal graded courses in the biological sciences required with no less than eight semester hours including one 400- or 500-level laboratory course in each of three of the biological sciences departments.
2. At least 15 semester hours of the total required must be at the 500 level.
3. At least one semester of seminar in each of three of the biological science departments must be attended for credit.
4. An overall 3.0 grade point average ($A = 4.0$) must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
5. A research paper is required demonstrating the ability to collect and analyze data and to report interpreted results in a scientific manner. A library research problem is acceptable, but must include an original contribution of analysis and interpretation. No less than three nor more than six semester hours of "Research" may be counted for credit in meeting requirements. (*Only those courses listed as "Individual Research", Introduction to Research", etc. may be taken for credit. "Thesis Research" may not be used for this requirement.*)
6. A final oral examination is required, consisting of two parts:
 - a. a public presentation of the research paper and
 - b. a closed session of inquiry by the student's Research and Advisory Committee.

Thesis Option

A total of 30 semester hours of 400- or 500-level courses is required with the following provisions:

1. A minimum of 21 semester hours of formal graded courses in the biological sciences is required with no less than six semester hours coming from each of three of the biological science departments.
 2. A least 15 semester hours of the total required must be at the 500 level.
 3. At least one semester of seminar in two of the four biological science departments must be attended for credit.
 4. An overall 3.0 grade point average ($A = 4.0$) must be maintained with no course in which the grade is less than a *C* counting toward the degree requirements.
 5. A thesis embodying original research is required and may be counted for not less than three nor more than six semester hours of credit.
 6. A final oral examination is required consisting of two parts:
 - a. A public presentation of the thesis research and a closed session of inquiry by the student's research and advisory committee.
- *****

Courses (BIOL)

500-3 Contemporary Biology for Teachers. An introduction to fundamental biological concepts. Emphasis is placed on exploring plant and animal model systems using contemporary methodologies. Examples of biological processes will be covered from genomics to ecosystems. Prepares teachers to introduce biological principles and innovative approaches to understanding biological systems in the classroom. Prerequisite: SCI 210 a & b or equivalent.

601-1 Continuing Enrollment. For students who have not finished their degree programs and who are in the process of working on their dissertations, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any course is not permissible. Graded S/U. Prerequisite: minimum hours as stated above.

BIOMEDICAL ENGINEERING

www.engr.siu.edu/home.html
amalms@siu.edu

COLLEGE OF ENGINEERING

Master of Science (MS) and Master of Engineering (ME) in Biomedical Engineering

Academic Objectives

The proposed program, consistent with the mission and priorities of the University, is designed to achieve the following academic objectives:

- To provide high quality education in the field of biomedical engineering and to prepare the graduates for successful and rewarding employment as engineers or for continuing their education through the doctoral level.
- To provide the students with the training necessary to successfully apply the fundamental concepts and methods of biomedical engineering to selected areas of employment or research and development.
- To enhance the research environment and productivity of the College of Engineering, and all other units participating in the program, for the benefit of the students.

Admission Requirements

Admission to the program requires a Bachelor of Science degree in Engineering Sciences, or a related field with a GPA of 3.25 / 4 or higher. Applications for admission must include the following: A statement of interest, transcripts, GRE scores, three reference letters and TOEFL score (where appropriate), as required by the Graduate School. The application fee for all applicants, and any other documentation specifically required for international students will be in accordance to the requirements of the Graduate School. Admission to the program is made by the Dean of Engineering (or his designee) upon recommendation by the Biomedical Engineering (BME) Program Committee.

Curriculum

To achieve the program's academic objectives and to provide a diverse student body with the opportunity to enroll in the program, the curriculum is structured in three modules as follows:

Module 1.

Biomedical Engineering Foundation 12 Semester Credit Hours

This module is required for all biomedical engineering students and is designed to provide the background necessary for all areas of specialization offered by the program. The module consists of six hours of analytical

foundation and six hours of science foundation. The analytical foundation consists of the following courses:

BME 501 Statistics for Biomedical Engineers 3 hours
ENGR 521 Probability and Random Variables 3 hours

Students that do not have the prerequisite knowledge to enroll in these courses may be admitted to the program with the requirement to take and successfully complete the necessary additional mathematics background courses.

The science foundation requires at least six hours selected from the following courses offered by the Departments of Physiology and Chemistry and Biochemistry.

PHSL 410A	Mammalian Physiology
PHSL 410B	Mammalian Physiology
CHEM 444	Intermediate Organic Chemistry
CHEM 451	Biochemistry

The selection of the science courses must be approved by the BME Program Coordinator based on the student's academic background and desired area of specialization. The courses above are expected to be selected most of the time. However, with the approval of the program coordinator, students may select other science courses that better complement their background or better serve their area of interest. The requirement for six hours of science will be waived for students with Bachelor of Science degree in Biomedical Engineering, however, these students will be expected to take three hours of additional engineering courses to meet the requirements of the Graduate School for MS degrees.

Module 2.

Biomedical Engineering Concentration 12 Semester Credit Hours

This module includes the 500-level BME courses and 500-level courses that are related to biomedical engineering and are being offered by different units on Campus. The program offers the following five areas of concentration:

1. Bioinformatics and Computational Medicine
2. Modeling and Simulation of Biomedical Processes
3. Biomedical Imaging
4. Biomedical Instrumentation
5. Biomechanics and Biomaterials

For each of the concentrations above, there is an approved list of recommended 500-level courses (BME and related courses offered by different units). The approved

course lists for the five concentrations are shown in Table 1. The students, normally, are expected to select all twelve hours from one of the concentrations. With the approval of their advisor, however, students may select nine hours from the concentration only, and three hours as a free elective. Finally, with the approval of the Program Coordinator, students may select any combination of courses, depending on their background or their specific interests. In all cases, at least six hours must always be selected from BME courses.

Table 1.

Recommended Courses for each of the Five BME Concentrations

Concentration 1	Concentration 2	Concentration 3	Concentration 4	Concentration 5
BME 531	BME 536	BME 531	BME 533	BME 535
BME 532	BME 537	BME 532	BME 534	BME 539
BME 535	BME 538	BME 533	BME 535	BME 540
BME 537	BME 541	BME 534	BME 537	BME 541
ECE 542	ECE 523	ECE 542	BME 538	BME 542
ECE 552	ECE 528	ECE 558	BME 541	ME 504
ECE 555	ECE 563	ECE 568	ECE 523	ME 509
ECE 568	ECE 584	ECE 574	ECE 528	ME 531
ECE 572	CS 501	ECE 578	ECE 564	ME 538
ME 565	PLB 524	ME 504	ECE 565	ME 553
PSYC 514	PSAS 571	CHEM 536	ECE 566	ME 562
PSYC 516	MBMB 520	CHEM 537	ECE 574	ME 564
PHYS 531	MBMB 530	SPCM 501	ME 545	ME 565
PHYS 550	MBMB 531	CDS 519	ME 565	ME 566
PSAS 571	PHYS 550		ENGR 530	ENGR 530
ME 577	ZOOL 573		ENGR 540	ENGR 540
MBMB 556	ME 565		CS 501	PSYC 514
MBMB 562	ME 577		SPCM 501	PSYC 516
	PSYC 514		CDS 519	ME 577
	PSYC 516			PE/KIN 505

Module 3.

Biomedical Research or Capstone Design 9 Semester Credit Hours

Master of Science Option (MS)

For the students seeking a Master of Science Degree in Biomedical Engineering, this module consists of the following:

BME 599	Thesis	6 hours
BME 598	Biomedical Engineering Seminar	2 hours
BME 597	Biomedical Research Ethics	1 hour

All requirements and regulations regarding the Thesis (as is the case with all the other Master's degrees in traditional engineering disciplines) are consistent with the relevant policies and procedures of the Graduate School published in the graduate catalog. One hour of Biomedical Engineering Seminar BME 598 must be taken in the first semester of study to serve as introduction to biomedical engineering.

Thus, students with BS degrees in traditional engineering disciplines or computer science are expected to complete the requirements of the program with thirty-three hours. Students with BS degree in biomedical

engineering will require thirty hours. For students with BS degrees in other than engineering disciplines, it is possible that more than thirty-three hours will be needed, depending on the background and interests of the student. This will be assessed, for each student individually, at the time of admission.

Master of Engineering Option (ME)

For the students seeking a Master of Engineering Degree in Biomedical Engineering, this Module consists of the following:

BME 592	Capstone Design	3 hours
BME 598	Biomedical Engineering Seminar	2 hours
BME 597	Biomedical Research Ethics	1 hour
	Elective Course	3 hours

BME 592, Capstone Design, must involve substantial design in a biomedical engineering field and must be concluded with a technical report. The report both in terms of technical content and presentation must be approved by a three member faculty committee appointed and chaired by the faculty member who directed the project. One hour of Biomedical Engineering Seminar BME 598 must be taken in the first semester of study to serve as introduction to biomedical engineering. For students with BS in engineering the Elective Course must be at the 500-level if an Engineering course, otherwise it could be at the 400-level. For students with BS in Science the Elective Course must be taken at the 500-level if a science course, otherwise it could be at the 400-level. In any event, the Elective Course must be approved by the program coordinator.

Thus students with BS degrees in traditional engineering disciplines or computer science are expected to complete the requirements of the program with thirty-three hours. Students with BS degree in biomedical engineering will require thirty hours. For students with BS degrees in other than engineering disciplines, it is possible that more than thirty-three hours will be needed, depending on the background and interests of the student. This will be assessed, for each student individually, at the time of admission.

Program Administration and Student Advisement

The BME Program Committee consists of six faculty members (designated by their respective deans), one from the School of Medicine, one from each of the Colleges of Science and Agricultural Sciences and three from the College of Engineering. The Dean of Engineering appoints the BME Committee Chair and Program Coordinator.

The Program Committee, in addition to recommending on admissions, reviews the program, conducts the outcomes assessment process and makes recommendations for the continuous improvement of the program. The Program Coordinator will be responsible for advising new students and assisting them with their initial plan of study. The Program Coordinator acts as graduate advisor to all students until a faculty advisor is assigned to

them, and is responsible for the day-to-day operation of the program.

For any issue not specifically addressed, such as residency requirements, time limits, credit transfer, etc., please refer to the rules and regulations of the Graduate School, published in the graduate catalog.

Program Outcomes

- The graduates from the MS and ME programs in Biomedical Engineering are expected to develop and demonstrate the following abilities:

- To successfully apply analytical methods (especially probability and statistics) to biomedical engineering problems.
- To successfully apply engineering methods, including modeling, simulation and design to biomedical problems.
- To communicate in clear and concise technical language and to effectively present their research or design results.
- To understand the basic concepts, tools and methodology of research. This will help them in successfully pursuing doctoral studies.

Courses

501-3 Statistics for Biomedical Engineers. Theoretical introduction to the basic principles of statistical modeling and estimation focusing on biomedical engineering applications such as genetics and genetic-related disorders. Prerequisite: PHSL 410A or consent of instructor.

531-3 Biomedical Optical Diagnostic. Theoretical and experimental principles of optically based diagnostic systems; emphasis on generating quantitative descriptions of biochemical and biophysical interactions of optic systems as applied to medical diagnostics and sensing. Spectroscopy is also covered. Prerequisite: Graduate standing and consent of instructor.

532-3 Biomedical Imaging. This course is designed to provide students with a working knowledge of the theoretical and experimental principles underlying the major medical imaging systems including CT, MRI, Ultrasound, and X-ray. Prerequisite: Graduate standing and consent of instructor.

533-3 Speech Processing. Fundamentals of speech production system, signal analysis of speech, speech coding, linear prediction analysis, speech synthesizing, and speech recognition algorithms. Prerequisite: ECE468 or consent of instructor.

534-3 Biomedical Sensors and Measurements. Design and evaluation of sensors with application in biomedical engineering. Instrumentation and Techniques for measurements related to biomedical applications. Prerequisite: PHSL410A, CHEM444, or consent of instructor.

535-3 Information Processing in Biomedical Engineering. Methods for evaluating different approaches in signal processing systems for biomedical applications; provides familiarity with the variety of exciting software and hardware systems. Prerequisite: PHSL410A, CHEM444, or consent of instructor.

536-3 Modeling and Synthesis of Biological Mechanisms. Mathematical and computer modeling of physiological systems and mechanisms; principal emphasis on cardiovascular systems, nerve cells, respiratory system, renal system, and skeletal-muscle.

Prerequisite: PHSL410A or CHEM444, and ECE 421 or consent of instructor.

537-3 Embedded Microprocessor System Design. Design, analysis, and evaluation of microprocessor-based systems for biomedical implementation. Prerequisite: ECE424 or consent of instructor.

538-3 Medical Instrumentation: Application and Design. Basic concept of Medical instrumentation, basic sensors and principles, amplifiers, biopotential electrodes, blood pressure and sound, measurement of respiratory system, chemical biosensors, Cellular measurements, Nervous system measurements, magnetic resonance imaging. Prerequisite: PHSL410A or CHEM444, or consent of instructor.

539-3 Biomechanics I. Introduction to mechanical behavior of biological tissues and systems, influence of material properties on the structure and function of organisms, methods for the analysis of both rigid body and deformational mechanics with application to include biological tissues such as bone, muscle, and connective tissues. Prerequisite: ME470 or consent of instructor.

540-3 Biomechanics II. Advanced topics in Biomechanics focusing on design, development, and evaluation of artificial organs. Prerequisite: ME470 or consent of instructor.

541-3 Diagnostic Ultrasound Physics. Propagation of ultrasonic waves in biological tissues; principles of ultrasonic measuring and imaging instrumentation; design and use of currently available tools for performance evaluation of diagnostic instrumentation; biological effects of ultrasound. Prerequisite: Modern physics, calculus & Fourier analysis or consent of instructor.

542-3 Biomaterials. This course addresses the bulk and surface properties of biomaterials used for medical applications. Artificial Organs and Tissues and Tissue Engineering are included. Analytical techniques pertinent to biomaterial evaluation, and testing. Prerequisite: ME410 or consent of instructor.

577-3 Bioprocess Engineering. The course objective is to introduce bioprocessing concepts to ME and BME students. This will introduce the idea of designing a system

to achieve a biological reaction objective. It will have content in pharmaceutical production, production of enzymes, and other bioproducts, research involving cell culture reactors, pharmacokinetics, and other bioprocessing. Prerequisite: consent of instructor.

592-3 to 6 Biomedical Capstone Design. Individual advanced project, with heavy emphasis on design, selected by the student and approved by his advisor. The project must be strongly related to biomedical engineering. This project normally will be equivalent to three credit hours. However, with the approval of the BME program coordinator, the project could be equivalent to a maximum of six credit hours. Prerequisites: consent of instructor.

593-3 Advanced Topics in Biomedical Engineering. Lectures on advanced topics of special interest to students in various areas of biomedical engineering. This course number is used to test new experimental courses in Biomedical Engineering. Prerequisites: consent of instructor.

597-1 Biomedical Research Ethics. Series of lectures from distinguished speakers, from academia, industry and government, regarding ethical issues associated with

biomedical research and development. Graded S/U or DEF only. Prerequisite: Enrollment in BME program.

598-2 (1,1) Biomedical Seminar. Must be taken in two semesters, one credit hour per semester. The first hour must be taken during the student's first semester of study. The intent is to provide an introduction to biomedical engineering through a series of lectures from speakers, from academia, industry and government, regarding biomedical engineering. The second hour will be the traditional graduate seminar for the biomedical engineering program. Prerequisite: Admission to BME program.

599-1 to 6 Thesis. Students are eligible to register for thesis when they have completed Module 1 of the BME program and the approval of the instructor who will act as thesis advisor.

601-1 Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of their thesis or capstone design course. The student must have completed all other course requirements to be eligible to register in this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only. Prerequisites: Completion of course work except BME 592 or 599.

BLACK AMERICAN STUDIESwww.bas.siuc.edu/**COLLEGE OF LIBERAL ARTS****Graduate Faculty:**

Brown, Joseph A., *Director* and Professor, Ph.D., Yale University, 1984; 1997.

Caffey, Ronald A., Assistant Professor, Ph.D., Southern Illinois University Carbondale, 1996(MBA), 2007

Chipasula, Frank M., Associate Professor, Judge Williams Holmes Cook Professor, Ph.D. Brown University, 1987; 2005.

Gadzekpo, Leo K., Assistant Professor, Ph.D., American Cultural Studies, Bowling Green University, 1997, 1998.

Smoot, Pamela A., Assistant Professor, Ph.D., American History, Michigan State University, 1998, 1999.

There is no approved graduate program in Black American Studies. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description.

Courses (BAS)

410H-3 African Expressive Culture. (Same as Anthropology 410H) This course examines aspects of African expressive culture including the visual arts, music, dance, orature, cinema, drama, and ceremony from an anthropological perspective. Particular attention is given to analysis of African expressive culture in social context and the role of the arts in the practice of politics, religion, medicine, and other aspects of African life. Many of the expressive genres examined deal with historical representation and political resistance. Therefore this course provides insights into African history and politics through the creative representations of African artists.

420-3 Themes in Africana Drama. (Same as THEA 460). Explores significant themes in African and African American drama, with special attention to performance styles and cultural issues.

449-3 Race and Media in United States History. (Same as History 449 and Mass Communication and Media Arts 449) This course explores the history of race in the modern United States by focusing on moments of racial crisis that garnered media attention. The course asks what these moments reveal about the shifting status of "race," as well as how spectacles have changed with the transformation of modern media.

460-3 Slavery and The Old South. (Same as History 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism.

461-3 Black Americans on the Western Frontier. (Same as History 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explorers in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's.

465-3 Governments and Politics of Sub-Saharan Africa. An examination of the impact of western colonial rule on the societies and politics of Africa, the method by which these colonial areas became sovereign states in the post-World War II era, the role of domestic political institutions, African political thought and behavior, and the development of foreign policies regarding relations with other African states, continental and international organizations, and international organizations, and non-African states.

472-3 Psychology of Race and Racism. (Same as Psychology 470) A review of the history and evolution of the construct of race as a psychological phenomenon. The persuasiveness of race in every sphere of life will be studied, from a multidisciplinary perspective.

473-3 Comparative Slavery. (Same as History 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally, and thematically.

475-3 Education and Black America. This course uses the scholarship of cultural anthropology and social studies to look at the history of education in the African American community; how public education affects African American families; how schools shape cultural change and how racial, ethnic peer group, and gender issues help determine curriculum issues.

491-3 to 6 Independent Readings in Africana Studies. Special topics, focused on research needs of students who are regularly enrolled in upper-division courses, especially graduate students doing research in Africana related topics in other departments and programs. May be repeated for up to six credit hours. By permission of the director of the BAS program.

495-3 to 9 African Cultural Continuities: Study Abroad. Study abroad 4-6 week program is designed to introduce similarities in culture (food, dance, music, family traditions, religion) of people in Ghana and in the cultures of people in

the African diaspora. Class begins on the SIUC campus and will re-locate to Elmina and Cape Coast, Ghana, during the first year of a three-year sequence. Other years will locate in areas of the West Indies, Caribbean & Central America. May be taken for graduate credit. Prerequisite: six hours of Black American Studies or African Studies courses and permission of instructor.

499-3 to 9 (3 per topic) Special Topics in Black American Studies. Topics vary and are announced in advance. May be repeated as the topic varies. Prerequisite: 109 or permission.

BUSINESS ADMINISTRATION

www.cba.siu.edu/

E-Mail: cobagp@cba.siu.edu

COLLEGE OF BUSINESS

The graduate faculty, consisting of members of the School of Accountancy and the Departments of Finance, Management, and Marketing, offers graduate work leading to the Master of Business Administration degree, the Master of Accountancy degree, and the Doctor of Philosophy degree.

Graduate Faculty in Accountancy:

See under the major heading for the program in Accountancy

Graduate Faculty in Finance:

Dauids, Lewis E., Professor, *Emeritus*, Ph.D., New York University, 1949; 1978.

Davidson, Wallace N., III, Professor, Ph.D., Ohio State University, 1982; 1989. Corporate finance.

Deng, Saiying, Assistant Professor, Ph.D., Temple University, 2005; 2009.

Elsaid, Hussein H., Professor, *Emeritus*, Ph.D., University of Illinois, 1968; 1967. International finance and financial management.

Intintoli, Vincent, Assistant Professor, Ph.D., University of Arizona, 2007; 2007. Corporate governance and mergers and acquisitions.

Mathur, Iqbal, Professor, *Emeritus*, Ph.D., University of Cincinnati, 1974; 1977.

McNutt, Jamie, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2005; 2009.

Musumeci, James, Associate Professor and *Chair*, Ph.D., University of Texas at Austin, 1987; 1993. Investments and corporate finance.

Peterson, Mark A., Associate Professor, Ph.D., Pennsylvania State University, 1996; 1997. Investment and corporate finance

Rakowski, David, Assistant Professor, Ph.D., Georgia State University, 2003; 2003. Investments and financial markets.

Tyler, R. Stanley, Associate Professor, *Emeritus*, J.D., University of Illinois, 1952; 1970.

Vaughn, Donald E., Professor, *Emeritus*, Ph.D., University of Texas, 1961; 1970.

Wang, Xiaoxin, Assistant Professor, Ph.D., Pennsylvania State University, 2003; 2003. Market microstructure and investments.

Waters, Gola E., Professor, *Emeritus*, J.D., University of Iowa, 1957; Ph.D., Southern Illinois University Carbondale, 1970; 1965.

Graduate Faculty in Management:

Bateman, David N., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1965.

Karau, Steven J., Associate Professor, Ph.D., Purdue University, 1993; 1998. Organizational behavior, human resource management.

Larson, Lars L., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971; 1971.

Litecky, Charles R., Professor, Ph.D., CCP, University of Minnesota, 1974; 2001. Management information systems.

McKinley, William, Professor, Ph.D., Columbia University, 1983; 1990. Organization theory, organizational behavior, strategic management.

Melcher, Arlyn J., Professor, Ph.D., University of Chicago, 1964; 1989. Organization theory, strategic management, research methodology.

Michalisin, Michael, Associate Professor, Ph.D., Kent State University, 1996; 1997. Strategic management, organization theory, international business.

Mote, Jonathon, Assistant Professor, Ph.D., University of Pennsylvania, 2008; 2009.

Mykytyn, Peter P., Jr., Professor, Ph.D., Arizona State University, Tempe, 1985; 2001. Management information systems.

Nelson, H. James, Assistant Professor, Ph.D., University of Colorado-Boulder, 1999; 2005. Information systems.

Nelson, Kay M., Professor, Ph.D., University of Texas at Austin, 1995; 2005. Management information systems.

Nelson, Reed, Professor, Ph.D., Cornell University, 1983; 1991. Organizational behavior and theory.

Pearson, John M., Associate Professor, D.B.A., Mississippi State University, 1991; 2001. Management information systems.

Sekaran, Uma, Professor, *Emeritus*, Ph.D., U.C.L.A., 1977; 1977.

Stubbart, Charles, Associate Professor, Ph.D., University of Pittsburgh, 1983; 1991. Strategic management, international business, entrepreneurship.

Tadishina, Suresh K., Associate Professor, Ph.D., University of Cincinnati, 1987; 1986. Operations management and management science.

Vicars, William M., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1969; 1961.

White, Gregory P., Professor and *Chair*, Ph.D., University of Cincinnati, 1976; 1978. Production management and management science.

Graduate Faculty in Marketing:

Adams, Kendall A., Professor, *Emeritus*, Ph.D., Michigan State University, 1962; 1965.

Adjei, Mavis, Assistant Professor, University of Mississippi, Ph.D., 2006; 2006. Marketing relationships, customer retention.

Anderson, Carol H., Associate Professor, *Emerita*, Ph.D., Texas A&M University, 1980; 1979.

Bruner II, Gordon C., Professor, Ph.D., University of North Texas, 1983; 1984. Consumer behavior, promotion management, scale compilation.

Campbell, David A., Assistant Professor, Ph.D. University of Mississippi, 2006; 2006. Competitive dynamics, marketing strategies, product design with performance and innovation consequences.

Clark, Terry, Professor and *Chair*, Ph.D., Texas A&M University, 1987, 1999. Marketing strategy, global marketing, global business strategy.

Cradit, J. Dennis, Professor and *Dean*, Ph.D., University of Iowa, 1984; 2006. Marketing segmentation, quantitative methods, business-to-business marketing.

Dommermuth, William P., Professor, *Emeritus*, Ph.D., Northwestern University, 1964; 1968.

Fraedrich, John P., Professor, Ph.D., Texas A&M University, 1988; 1987. Ethics, international marketing, industrial sales.

Hindersman, Charles H., Professor, *Emeritus*, D.B.A., Indiana University, 1959; 1960.

King, Maryon F., Associate Professor, Ph.D., Indiana University, 1989; 1988. Marketing management, consumer behavior, promotion management.

Knowles, Lynette, Associate Professor, Ph.D., The Ohio State University, 1990; 1988. International business/marketing, marketing channels, physical distribution.

Lambert, Zarrel V., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1966; 1995.

Moore, James R., Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1972; 1969.

Nasco, Suzanne Altobello, Assistant Professor, Ph.D., University of Notre Dame, 1999; 2002. Counterfactual analysis, statistics, consumer behavior.

Summey, John H., Associate Professor, Ph.D., Arizona State University, 1974; 1978. Marketing management, marketing research, product strategy

Master of Business Administration

The M.B.A. program is oriented toward preparing students for managerial positions in business and government. The program emphasizes the ability to comprehend internal and external social, legal, political, and economic forces as they affect the decision-making process within a business organization. The specific learning objectives of the program include the following:

- Students must understand basic concepts and terminology in key functional areas of business (i.e., accounting, finance, management, and marketing).
- Students must demonstrate the ability to diagnose, analyze, and provide solutions to complex business situations.
- Students must possess key skills (written and oral communication skills, computer skills, team-work skills, and leadership skills) required for successful managerial careers.
- Students must be able to integrate the functional areas of business such that decision-making serves the interests of the entire business.

The program has been structured with flexibility so as to serve both holders of baccalaureate degrees in business administration and those who hold degrees in other

disciplines. The M.B.A. program is accredited by the AACSB International.

M.B.A. Core

BA 510	Managerial Accounting and Control Concepts
BA 530	Financial Management
BA 540	Managerial and Organization Behavior
BA 550	Marketing Management
BA 560	Management of Information Systems
BA 598	Business Policies

- Students with undergraduate degrees in finance must replace BA 530 with BA 531.
- Students with undergraduate degrees in accountancy must replace BA 510 with a 500-level ACCT prefix course.
- The International Business/Experience requirement of the MBA program may be satisfied by taking BA 580, 581, 582, or 588; by engaging in an international (off-shore) internship or by an approved program offered by a partner institution.

Change Management Concentration

Students seeking the M.B.A. concentration in the Change Management area will take

- BA 503 Management of Change
and two three-hour elective courses from the following:
- BA 545b Advances in Organizational Behavior
 - BA 545c Advances in Organization Theory
 - BA 545d Advances in Strategic Management
 - BA 545e Special Topics in Organizational Behavior
 - BA 545f Special Topics in Organization Theory
 - BA 545g Special Topics in Strategic Management
 - BA 546 Leadership and Managerial Behavior
 - BA 548d Strategic Management of Information

Finance Concentration

Students seeking the M.B.A. concentration in the Finance area will take a total of three 3-hour elective courses.

- BA 531 Advanced Financial Management
- BA 532 Financial Institutions and Markets
- BA 533 Investment Concepts
- BA536 Financial Analysis and Security Valuation
- BA582 International Finance

International Business (IB) Concentration

Students seeking the M.B.A. concentration in the IB area will take a total of four 3-hour elective courses.

- BA 581 Global Marketing
- BA 582 International Finance
- BA 583 Global Operations Management
- BA 584 Global Business Strategies (a capstone course within the IB area).

Management Information Systems (MIS) Concentration

Students seeking the M.B.A. concentration in the MIS area will take:

- BA 561 Database Design and Applications
 - BA 562 Information Systems and Design
- and one 3-hour elective course from the following:
- BA 548b Seminar: Decision Support and Information Systems
 - BA 548e Seminar: Special Topics in Management Information Systems
 - BA 563 Management of Financial Information
 - BA 564 Management of Marketing Information

Marketing Concentration

Students seeking the M.B.A. concentration in the Marketing area will take a total of three 3-hour elective courses.

- BA 505 Brand Management
- BA 551 Product Strategy and Management
- BA 558 Promotional Strategy and Management
- BA 564 Management of Marketing Information
- BA 581 Global Marketing

General M.B.A. (G.M.B.A.) Concentration

Students seeking the General M.B.A. track will take a total of four 3-hour elective courses.

- BA 503 Management of Change
- BA 514 Ethics of Business
- BA 531 Advanced Financial Management

- BA 532 Financial Institutions and Markets
- BA 533 Investment Concepts
- BA 541 Operations Research II
- BA 544 Advanced Production Planning and Inventory Management
- BA 547a Seminar: Foundations in Production/Operations Management
- BA 547b Seminar: Service Operations Management
- BA 547c Seminar: Production/Operations Management and Information Systems
- BA 548b Seminar: Decision Support and Information Systems
- BA 551 Product Strategy and Management
- BA 555 Seminar in Consumer Behavior
- BA 556 Seminar in Marketing Strategy
- BA 558 Promotional Strategy and Management

And all elective courses designated for the MIS and IB concentrations above.

Admission Requirements

Prospective degree candidates are expected to demonstrate a readiness for graduate study and an aptitude for successful performance in graduate level work in business administration. Admission to the program is based on the applicant's undergraduate record, a satisfactory score on the Graduate Management Admission Test, and other evidence pertaining to ability to perform well in graduate work in business administration. Special circumstances and work experience may be considered if presented. More specifically, the applicant must:

1. Meet all admission requirements set forth by the Graduate School. These requirements are outlined elsewhere in the catalog.
2. Complete the Graduate Management Admission Test and have the results of the test mailed directly to graduate programs, College of Business.

Information regarding this test is available by logging on to the website for: Graduate Management Admission Test. The website address is: <http://www.mba.com>.

To apply, one needs to complete and submit a Graduate School application and an M.B.A. program application. Application materials may be obtained from: www.cba.siu.edu/mba/ and www.gradapp.siu.edu/cbaapp/, Graduate Programs, College of Business, Southern Illinois University Carbondale, Carbondale, IL 62901-4625, (618) 453-3030. E-mail: cobagp@cba.siu.edu

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admission to Graduate Study in the M.B.A. program in Business and Administration. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Double Major Policy

Any graduate student wishing to pursue a double major for a master's degree that includes business administration must satisfy the following requirements in addition to any requirements stated in the Graduate Catalog.

- The individual must satisfy all requirements for admission to the relevant master's program in business (M.B.A. or M.Acc.).
- The individual must satisfy all foundation requirements of the relevant master's program in business.
- The individual must complete all core courses, secondary core (M.Acc.) courses, and elective course requirements for the relevant master's program in business.
- No more than six hours of coursework outside the College of Business may be counted toward elective requirements in the relevant master's program in business.

Non-Business Graduate Students

- Non-business graduate students will be limited to six hours of 500-level BA prefix courses. These courses require the consent of the instructor and the department, and all course prerequisites must be met.
- Non-business graduate students who are put on academic probation will NOT be allowed to continue in 500 level BA prefix courses.
- Non-business graduate students will be allowed to register for BA level foundation courses (i.e., BA 410, 426, 430, and 450).

Application Deadlines

	<u>Fall</u>	<u>Spring</u>	<u>Summer</u>
Assistantship Applicants	March 15	Sept 15	February 15
Fellowship Applications	Nov. 15 of previous year (Fall awards only)		
Other U.S. Applicants	June 15	Nov. 15	April 15
Other International Applicants	April 15	Sept. 15	February 15

Degree Requirements

A minimum of 33 semester hours of coursework is required. Students must earn a 3.0 grade point average (4.0 = A). Candidates who receive permission to write a thesis must complete a minimum of 30 semester hours of coursework plus an acceptable thesis, for which 6 semester hours of credit are assigned.

Students who enter the M.B.A. degree program without the necessary foundation courses in the common body of knowledge of business and administration as specified by the AACSB International must complete them in a satisfactory manner. These students may be required to complete up to 37 semester hours of acceptable course work to satisfy this requirement.

College of Business Technology Fee. Assessed for CoBA majors only at \$6.00 per credit hour Fall, Spring

Semesters (up to 12 hours) and Summer Semester (up to 6 hours).

For courses previously taken to be evaluated as possible equivalents to M.B.A. foundation courses at SIUC, one needs to have earned a grade of *C* or higher in each and supply the M.B.A. coordinator with the course syllabus for each course to be evaluated. Where syllabi are not available, a course catalog, or catalogs as appropriate, for the years the courses were completed may be presented. Transcripts may not be substituted for syllabi/catalog descriptions. This supporting documentation needs to be provided to the M.B.A. coordinator at least 2 weeks in advance of one's first M.B.A. advisement appointment and subsequent registration.

The M.B.A. degree program coursework to be taken beyond the foundation courses is determined on an individual basis in conference with the M.B.A. program coordinator. All core and elective requirements must be met. For up-to-date information regarding the core and elective courses of the M.B.A. program, contact: Graduate Programs, College of Business, Rehn Hall, Room 133, Southern Illinois University, Carbondale, IL 62901-4625.

Students may choose to take all of their electives in a particular area such as change management, finance, international business (IB), management information systems (MIS), or marketing in fulfilling their electives, or, alternatively, take electives across 2 or more areas. Students may request approval to take one or more substantive electives outside of business which would provide training unavailable through business courses and would facilitate the student meeting career goals.

Transfer Credit

Within limits imposed by the policies of the Graduate School, an incoming student may receive transfer credit for up to 6 semester hours of equivalent coursework if the courses were taken at an AACSB International accredited graduate school.

A graduate student who has 6 hours or less of coursework remaining in their program may petition the master's programs committee for permission to complete up to 6 hours of equivalent coursework at another AACSB International accredited graduate school. The determination of equivalency is to be made by the director of the Master of Business Administration degree program.

Coursework from other than AACSB International accredited graduate schools must be approved by the master's programs committee.

Academic Retention

In addition to the retention policies of the Graduate School, a student may earn no more than 5 hours of *C* or lower in, graduate courses taken beyond the foundation requirements, or he/she will be suspended from the M.B.A. program. A student who has 3 outstanding recorded grades of *Inc* or *Def* remaining on the grade record at the end of any semester or session, for any reason, will be

deemed to be not making normal progress and will be placed on probationary status. If the student has 3 outstanding grades of *Inc* or *Def* remaining on record at the end of the next semester or session, the student will be suspended from the program. The definitions of *Inc* and *Def* may be found in the *Graduate Catalog*.

A student who is to receive a grade of *Inc* in a course is to meet with the instructor to work out a time and conditions for completion of the course within policy guidelines. Typically, a Notification of Incomplete Grade Agreement form is completed and the student is provided with a copy.

Master's students holding graduate assistant positions supported by the College of Business are required to maintain a 3.0 graduate grade point average or automatically lose his/her graduate assistant position. A complete copy of the "Policies and Procedures for the Master's Programs" may be obtained from the Graduate Programs Office, College of Business.

M.B.A./B.A. (Computer Science) Program

The College of Business in conjunction with the College of Science offers a five-year integrated M.B.A./B.A. (Computer Science) Program. Selected students will be admitted to this program directly after high school. Their admission to the M.B.A. is guaranteed as long as they maintain a 3.0 GPA in the B.A. in Computer Science. However, they will be required to take the GMAT test prior to admission to the M.B.A. Program.

M.B.A./J.D. Concurrent Degree Program

The College of Business and the School of Law, together, offer the M.B.A./J.D. concurrent degree program. The J.D. degree alone requires completion of 90 semester hours of coursework and the M.B.A. degree alone requires completion of 33 semester hours of coursework; however, in the M.B.A./J.D. concurrent degree program the School of Law accepts 9 semester hours of business coursework toward meeting the J.D. semester hour requirement and the College of Business accepts 9 semester hours of law toward meeting the M.B.A. semester hour requirement. The end result is that the concurrent degree program actually entails completion of 81 semester hours of law courses and 24 semester hours of business courses, with an 18 semester hours savings over pursuing both degrees separately outside of the M.B.A./J.D. concurrent degree program.

A student interested in enrolling in the M.B.A./J.D. concurrent degree program must apply both to the graduate program in law (which involves a law school application) and to the graduate program in business (which involves a Graduate School application and an M.B.A. program application) and be accepted by each program. The student may then request permission to pursue the concurrent degree program. This request must be made both to the College of Business and the School of

Law and should be made prior to commencing the second-year law curriculum.

During the first academic year of concurrent work on the two degrees, the student enrolls only in the first-year law curriculum. In any subsequent academic term, the student may enroll for courses either in the School of Law or in the Master of Business Administration program. A student registered for both law and graduate business courses in the same term must enroll for a minimum of 10 hours in law, and 12 semester hours in total, in order to meet A.B.A. residence requirements and the academic requirements of the School of Law.

M.B.A./M.A. in Mass Communication and Media Arts Concurrent Degree Program

The College of Business and the College of Mass Communication and Media Arts (MCMA) together offer an M.A. in mass communication and media arts/M.B.A., a concurrent degree program leading to both the Master of Business Administration and the Master of Arts with a major in mass communication and media arts.

The M.B.A. degree requires completion of 33 semester hours of coursework in addition to any foundation coursework that may be required; the M.A. in mass communication and media arts requires the completion of 30 to 38 semester hours of coursework. In the concurrent M.A. in mass communication and media arts/M.B.A. degree program, the College of Business accepts 6 semester hours of MCMA approved coursework, and MCMA accepts 6 semester hours of College of Business approved coursework.

The end result is that the concurrent degree program entails completion of 27 semester hours of College of Business approved courses and 24 to 32 semester hours of MCMA approved courses, for a total of 51-58 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.A. in mass communication and media arts/M.B.A. concurrent degree program.

Students interested in enrolling in the M.A. in mass communication and media arts/M.B.A. concurrent degree program must apply to both the graduate program in the College of Business and the graduate program in MCMA and be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.B.A. in the College of Business or the M.A. in mass communication and media arts may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester before the last semester of registration at SIUC.

M.B.A./M.S. in Agribusiness Economics Concurrent Degree Program

The College of Business and the Department of Agribusiness Economics (ABE) in the College of

Agricultural Sciences (COA) together offer an M.B.A./M.S., a concurrent degree program leading to both the Master of Business Administration and the Master of Science with a major in agribusiness economics.

The M.B.A. degree requires completion of 33 semester hours of coursework; the M.S. with a major in ABE requires the completion of 30 semester hours of coursework. In the concurrent M.B.A./M.S. degree program, the College of Business accepts 6 semester hours of ABE approved coursework, and ABE accepts 6 semester hours of College of Business approved coursework. The end result is that the concurrent degree program entails completion of 27 semester hours of College of Business approved courses and 24 semester hours of ABE approved courses, for a total of 51 hours; this is a savings of 12 semester hours over pursuing both degrees separately outside of the M.B.A./M.S. concurrent degree program.

Students interested in enrolling in the M.B.A./M.S. in agribusiness economics concurrent degree program must apply to both the graduate program in the College of Business and the graduate program in ABE. The student must be accepted by both programs. This initiates the process to pursue the concurrent degrees.

Students enrolled only in the M.B.A. in the College of Business or the M.S. in agribusiness economics may request admission into the other program and approval to pursue the concurrent degree program. Admission to the concurrent degree program must be done at least one semester before the last semester of registration at SIUC.

Online MBA Program (41 credit hours, 24 months)

This option is for those students who are working professionals and need an advanced degree. The students need to meet all the foundation requirements for the residential MBA, must be admitted to the Graduate School and complete an application to the College of Business Online Master Program available through the Online Master's Degree website at <http://online.business.siuc.edu>. Once admitted students will be provided an online advisor to guide them through the program. This is a cohort program and students are required to complete all courses specified over a 24 month period. Students are awarded the MBA degree upon satisfactory completion of all requirements. Students enrolled in the Online Masters of Accountancy program will complete the entire program via the internet. Descriptions of the individual courses below may be found in the Course Description section.

Requirements for Online MBA Program:

M.B.A. CORE

- BA 510 (3) Managerial Accounting and Control Concepts
- BA 530 (3) Financial Management
- BA 540 (3) Managerial and Organization Behavior
- BA 550 (3) Marketing Management
- BA 560 (3) Management of Information Systems

- BA 580 (3) International Dimensions of Business and Management

- BA 598 (3) Business Policies

GENERAL M.B.A. CONCENTRATION

Students seeking the General M.B.A. track will take a total of four 3-hour electives

- BA 505 (3) Brand Management
- BA 514 (3) Ethics of Business
- BA 536 (3) Financial Analysis and Security Valuation
- BA 546 (2) Critical Issues for Business Leaders
- BA 570 (2) Advanced Seminar in Leadership Development
- BA 583 (3) Global Operations Management
- BA 591 (4) Seminar on Career Effectiveness

For program schedule visit the College of Business Online Master's Degree Programs website at: <http://online.business.siuc.edu>.

Doctor of Philosophy

The Doctor of Philosophy in business administration degree program is designed to prepare individuals for faculty research and teaching positions in academic institutions and for high-level administrative or staff positions in business, government, and other organizations. Candidates for the Doctor of Philosophy in business administration degree must demonstrate in-depth knowledge of business and administration and high potential to undertake significant research.

Admission Requirements

To be eligible for admission, students must have completed a master's degree or its equivalent. A grade point average in all graduate level work of 3.5 (A = 4.0) is preferred, but not less than 3.25 is permitted for admission.

In certain instances admission to the Doctor of Philosophy in business administration degree program directly from the baccalaureate degree is permitted. To be considered for this admission route, students must have demonstrated promise of success in the Doctor of Philosophy in business administration degree program through outstanding achievement at the undergraduate level (minimum grade point average of 3.5 on a 4.0 scale) and superior performance in both the verbal and quantitative components of the Graduate Management Admission Test (minimum GMAT score of 600).

Applicants with exceptional research potential or outstanding academic preparation may have the option to enter the Doctor of Philosophy in business administration degree program after at least one semester as an M.B.A./M.Acc. student at SIUC.

To apply to the Doctor of Philosophy in business administration degree program, each applicant is required to take the Graduate Management Admission Test (of the Educational Testing Service) and have an official report of these scores sent to SIUC. The applicant needs to

complete and submit a Graduate School application and a Doctor of Philosophy in business administration degree program application. Application materials may be obtained from: www.cba.siu.edu/phd/ and

www.gradapp.siu.edu/cbaapp/, Graduate Programs, COBA, Southern Illinois University Carbondale, Carbondale, IL 62901-4625. E-mail: cobagg@cba.siu.edu

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admission to Graduate Study in the Doctor of Philosophy program in Business and Administration. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Differential Tuition and Technology Fee

Starting Fall 2008, the College of Business has implemented a differential tuition surcharge of 15% of applicable tuition for new College of Business majors. The differential tuition surcharge will be assessed at the in-state tuition rate and will be capped at 15 credit hours per semester. If students are charged the differential tuition surcharge, the technology fee (see item below) will not be assessed.

The College of Business assesses College of Business majors a technology fee of \$6.00 per credit hour for Fall and Spring semesters up to twelve semester hours and Summer up to six semester hours. The technology fee is being phased out and will be subsumed under the differential tuition surcharge (see item 16 below). Consequently, students will be charged either the technology fee or the differential tuition surcharge but not both.

Degree Requirements

Students in the program must complete course work in certain foundation areas. A student who has completed successfully the requirements for the M.B.A. degree from an AACSB International accredited graduate business program will have met the foundation requirements. A student with a M.Acc. from an AACSB International accredited program will be expected to take some courses, to be determined by the student's advisory committee, outside the accounting area. All other students will either complete the following courses or demonstrate proficiency based on prior academic work:

BA 410-3 Financial Accounting Concepts

BA 426-3 Managerial Economics

MATH 140-4 Short Course in Calculus

EPSY 506-4 Inferential Statistics

and 5 courses from any 3 of the following 4 areas:

a. BA 430, BA 510, BA 530

b. BA 450, BA 550, BA 598

c. BA 540, BA 598

d. BA 452, BA 420, BA 560

In addition, the student must demonstrate proficiency in computer programming.

The student must complete a prescribed program of doctoral coursework beyond the foundation work. A minimum of 60 semester hours is required: 12–18 hours in the major field; 6–12 hours in a support field; 6–12 hours of research tools; 1 hour of BA 571 Teaching and Research Essentials; and 24 hours of dissertation credit. Additional hours may be required as prescribed by the student's program advisory committee (PAC). Students on CoBA assistantships must teach at least 3-6 hours during their program with the appropriate student/teacher evaluations. The assistantship student's PAC determines whether sufficient proficiency has been attained before being admitted to candidacy, and an evaluation listing must be inserted into the Student's permanent file and signed by the Ph.D. Director.

It is expected that all doctoral coursework will be completed at SIUC. In exceptional cases, the PAC may consider petitions to accept credit, not to exceed 6 hours, for doctoral coursework done at other institutions.

In addition to the retention policy of the Graduate School, for the Doctor of Philosophy in business administration degree program five credit hours of C or three credits of D or F in any graduate level course will result in automatic dismissal from the Doctor of Philosophy in business administration degree program without any rights of appeal.

Advisement

For each student a program advisory committee (PAC) is constituted and approved according to procedures described in the Doctor of Philosophy in business administration degree program policies and procedures document of the College of Business. The PAC is responsible for developing and approving a program of study for the student which meets all requirements of the Graduate School and the Doctor of Philosophy in business administration degree program. The specific program is designed in terms of the individual student's career objectives.

Comprehensive Examinations

The comprehensive examination is designed to determine the breadth and depth of the student's knowledge within the discipline. A minimum of 2 years of study (48 semester hours) beyond the baccalaureate must be completed before the student is permitted to sit for the comprehensive examination, and the student must be in the last semester of all scheduled coursework.

The comprehensive examination has a written and oral portion. After successful completion of the written segment, the student will sit for the oral portion of the comprehensive examination. Students who pass the oral portion will be recommended for candidacy when the residency and research tool requirements have been met. Students who

fail the comprehensive examination, or any part thereof, may petition to retake the examination or any part thereof.

Specific conditions may be stipulated before the student can sit for the examination a second time. Those who fail the comprehensive examination a second time will be dismissed from the program.

Dissertation

Upon admission to candidacy, a dissertation committee is constituted and approved according to procedures described in the Doctor of Philosophy in business administration degree program policies and procedures document of the college. The student will prepare a written proposal and submit it to the dissertation committee and make an oral presentation of the dissertation proposal. On acceptance of the written and oral presentation of the dissertation proposal by the dissertation committee, the student will proceed with further work on the dissertation topic. The dissertation committee will monitor the student's progress in completing the dissertation. A final oral examination will be administered by the dissertation committee and will cover the subject of the dissertation and other matters related to the discipline. Upon successful completion of the final oral examination, the candidate will

be recommended for the Doctor of Philosophy in business administration degree.

Other Graduate Degrees Offered by the College of Business

The college also offers the Master of Accountancy (M.Acc.) degree. In addition, jointly with the School of Law the college offers the J.D./M.Acc. concurrent degree program. The reader is referred to the accountancy section of this catalog for details regarding the M.Acc. and J.D./M.Acc. programs.

For More Information

Additional information regarding the M.B.A. degree program or Doctor of Philosophy in business administration degree program may be obtained by contacting Graduate Programs, College of Business, Southern Illinois University Carbondale, Rehn Hall 133, Carbondale, IL 62901-4625. E-mail: cobagg@cba.siu.edu.

Website: <http://www.business.siu.edu/master.html> or <http://www.business.siu.edu/phd/default.html>.

Additional information regarding the M.Acc. degree program may be obtained by contacting the School of Accountancy in the College of Business. Email: sobery@cba.siu.edu.

Courses (BA)

Students desiring to enroll in these courses must be admitted to the Master of Business Administration, Master of Accountancy, or Doctor of Philosophy in business administration degree program or have permission of the associate dean for graduate study in business administration or accountancy.

410-3 Financial Accounting Concepts. Basic concepts, principles, and techniques used in the generation of accounting data for financial statement preparation and interpretation. Asset, liability, equity valuations and income determination is stressed. Prerequisite: Enrollment in M.B.A. program or consent of department.

426-3 Managerial Economics. Develops conceptual framework for business decision making with emphasis on demand, costs, prices and profits. Prerequisite: enrollment in M.B.A. program or consent of department.

430-3 Business Finance. An introductory course combining both a description of the structure of business financing and an analysis of functional finance from a managerial viewpoint. Prerequisite: enrollment in M.B.A. program or consent of department; 410, Educational Psychology 506 and M.B.A. program "computer ability" foundation requirement met, or equivalent.

450-3 Introduction to Marketing Concepts. An overview of the role of marketing within an economic system and of the major marketing activities and decisions within an organization. Emphasis is on developing an understanding

of the marketing process. Prerequisite: enrollment in M.B.A. program or consent of department.

470-3 Legal and Social Environment. An overview of the legal, social, and ethical dimensions which influence business with particular attention to the role of law as a control factor of society in the business world. Prerequisite: enrollment in M.B.A. program or consent of department.

503-3 Management of Change. The methods and processes of planned change are examined. Special emphasis is placed on the design and implementation of continuous improvement systems and related issues of managing constant change. Change models are viewed in the context of international competitiveness and a dynamic global environment. Prerequisite: enrollment in College of Business graduate program or consent of department.

505-3 Brand Management. This course will focus on important issues facing brand managers who are managing existing brands. The focus will be at the level of the brand and the discussions will pertain to issues involved in the development and implementation of brand strategies. The course will provide students with a conceptual framework to examine brand equity and use it as the basis for managing categories of brands, brand extensions, and dealing with the threats of generic brands. There will be an emphasis on bringing together the different elements of a brand strategy. Prerequisite: 550, enrollment in College of Business graduate program or consent of department.

510-3 Managerial Accounting and Control Concepts. Basic cost concepts, measures, methods and systems of internal accounting useful for managerial planning, implementation, control and performance evaluation. Includes cost analysis relevant for non-routine decision-making. Prerequisite: enrollment in College of Business graduate program or consent of department, 410 and M.B.A. program "computer ability" foundation requirement met, or equivalent.

513-3 Accounting Concepts in Business Organizations. Accounting theory and practice as it applies to business and other organizations. Emphasis is on current problem areas in accounting and on research methods being used to resolve these problems. Prerequisite: enrollment in College of Business graduate program or consent of department.

514-3 Ethics of Business. Philosophical implications of contemporary issues in business ethics. Prerequisite: enrollment in M.Acc. or M.B.A. Program, enrollment in College of Business graduate program or consent of department.

521-3 Business Conditions Analysis. Emphasis is given to macro-economic theory as it affects economic forecasting. Particular emphasis is given to GNP forecasting models, industry forecasts and forecasting for the firm. Prerequisite: enrollment in College of Business graduate program or consent of department, 430 or equivalent.

522-3 Operations Strategy for Global Competition. Study of the development of competitive strategy for the operations function, how that strategy relates to organizational strategy and how the operations function can contribute to an organizations' competitive capabilities in the global marketplace. Prerequisite: enrollment in College of Business graduate program or consent of department.

530-3 Financial Management. Provide a broad overview of basic concepts, principles, and recent innovations in financial management. Topics covered will include risk and return, valuation, capital budgeting, capital structure and cost of capital, dividend policy, financial planning, international financial management and corporate restructuring. Prerequisite: enrollment in College of Business graduate program or consent of the department, 510 and economics foundation requirement. Finance 330 with a grade of C or better. Students who have had Finance 361 or its equivalent or were undergraduate finance majors are not allowed in 530 and should take 531 instead.

531-3 Advanced Financial Management. An evaluation of selected financial policies connected with the acquisition and disposition of funds by the firm. An emphasis is placed on quantitative solutions to these problems. Prerequisite: enrollment in College of Business graduate program or consent of department, 430 or equivalent.

532-3 Financial Institutions and Markets. The principal financial institutions and markets will be studied in relation to their contribution to the efficient operation of the individual enterprise and the total company. Prerequisite: enrollment in College of Business graduate program or consent of department, 430 or equivalent.

533-3 Investment Concepts. A study of fixed return and variable return securities, investment services, industry and issue analysis, empirical studies of groups and individual stock price movements. Prerequisite: enrollment in College of Business graduate program or consent of department, 430 or equivalent.

534-3 Financial Decision Making. Study of the scope and nature of advanced financial decision making and the application of quantitative tools and techniques to decisions relating to working capital, fixed assets, cost of capital, value of the firm and financial structure. Prerequisite: enrollment in College of Business graduate program or consent of department.

536-3 Financial Analysis and Security Valuation (same as FIN 469). Study of financial problems facing corporations, their causes and solutions. Emphasis given to the impact of these financial problems on how the market values securities. Topics include liquidity and leverage analysis, analysis of profitability, and other financial analysis tools. Not available for students with credit for FIN 469. Prerequisite: BA 530 or BA 531, enrollment in MBA program or consent of department.

539-1 to 15 Seminar in Finance. A series of doctoral seminars on theoretical and empirical issues in finance. Sections (a) through (d) may be taken only once. Section (e) may be repeated as topics vary. (a) Corporate financial theory. (b) Financial institutions and markets. (c) Portfolio theory and speculative markets. (d) International financial theory. (e) Selected topics. Prerequisite: enrollment in College of Business graduate program or consent of department.

540-3 Managerial and Organization Behavior. Case analyses of human problems in the business organization. Application of findings of behavioral science research to organization problems. Development of direction and leadership skills. Prerequisite: enrollment in College of Business graduate program or consent of department, 440 or equivalent.

543-3 Personnel Management. An overview of the field of personnel administration, based on a review of the relevant literature and on practice in simulations of problems typically encountered in the field. Prerequisite: enrollment in College of Business graduate program or consent of department, 440 or equivalent.

544-3 Advanced Production Planning and Inventory Management. An in-depth study of analytical models and techniques for production planning, scheduling and inventory management. Designed to prepare students for relevant portions of American Production and Inventory Control Society (APICS) certification examinations.

Prerequisite: enrollment in College of Business graduate program or consent of department.

545-3 to 21 (3,3,3,3,3,3,3) Seminar in Organization Studies. A series of advanced seminars in organization studies. Sections (a)-(g) can be taken only once. (a) Foundations in Organization Studies. (b) Advances in Organizational Behavior. (c) Advances in Organization Theory. (d) Advances in Strategic Management. (e) Special Topics in Organizational Behavior. (f) Special Topics in Organization Theory. (g) Special Topics in Strategic Management. Prerequisite: enrollment in College of Business graduate program or consent of department.

546-3 Leadership and Managerial Behavior. This course will concentrate on leader and manager behavior at middle and upper organizational levels. Emphasis will be placed on leader and manager effectiveness and the factors that impact effectiveness. Prerequisite: enrollment in College of Business graduate program or consent of department.

547-3 to 15 (3,3,3,3 to 6) Seminar in Production/Operations Management. Series of advanced seminars in Production/Operations Management. Sections (a) through (c) may be taken only once. (a) Foundations in Production/Operations Management. (b) Service Operations Management. (c) Production/Operations Management and Information Systems. (d) Special Topics in Production/Operations Management. Prerequisite: (a),(b),(c),(d) enrollment in College of Business graduate program or consent of department.

548-3 to 18 (3,3,3,3,3 to 6) Seminar in Management Information Systems. A series of advanced seminars on Management Information Systems (MIS). Sections (a) through (d) may be taken only once. Section (e) may be repeated as topics vary. (a) Advances in Management Information Systems. (b) Decision Support and Information Systems. (c) Quantitative and Computer Methods for Decision Support and Information Systems. (d) Strategic Management of Information. (e) 3 to 6 Special Topics in Management Information Systems. Prerequisite: (a),(c),(d),(e) enrollment in College of Business graduate program or consent of department.

550-3 Marketing Management. A managerial approach to the study of marketing. Emphasis is on the nature and scope of the marketing manager's responsibilities and on marketing decision-making. Prerequisite: enrollment in College of Business graduate program or consent of department.

551-3 Product Strategy and Management. Designed to treat product management and its relationships with business policies and procedures; the development of multiproduct strategies, means of developing such strategies and the problems and methods of commercialization. Prerequisite: enrollment in College of Business graduate program or consent of department, 550 or equivalent.

552-3 Research Methodology for Marketing. The study of theory, method and procedure for quantitative and qualitative analysis of primary and secondary marketing data. Emphasis is placed on application of specific research tools to the process of formulating and testing research hypotheses. Prerequisite: enrollment in College of Business graduate program or consent of department.

554-3 Strategic Issues in Marketing and Society. A critical view of the social, political, legal and economic impact of strategic marketing decision making. Emphasis is on the ethical and moral ramifications of marketing activities in a complex social environment. Prerequisite: enrollment in College of Business graduate program or consent of department.

555-3 Seminar in Consumer Behavior. Emphasis on the theories and research relating behavioral science to the discipline of marketing. Development of sophisticated comprehension of the consumption process is undertaken. Prerequisite: enrollment in College of Business graduate program or consent of department.

556-3 Seminar in Marketing Strategy. Long run market opportunities are identified and evaluated. Methods of implementation and execution affecting the relationship of strategic marketing planning to the allocation decisions of top management are emphasized. The orientation is toward theoretical development to provide a base for continuing research in the field. Prerequisite: enrollment in College of Business graduate program or consent of department.

557-3 Seminar in Marketing Theory. The philosophical bases underlying the development of theory in marketing. The process of development of marketing ideations through research is emphasized. Prerequisite: enrollment in College of Business graduate program or consent of department.

558-3 Promotional Strategy and Management. The study of the elements of the promotional mix including advertising, personal selling, sales promotion and publicity and how they apply in the profit and not-for-profit sectors of the market place. Prerequisite: enrollment in College of Business graduate program or consent of department, 550 or equivalent.

560-3 Management of Information Systems. A survey of information system design, analysis and operations. Topics include systems concepts, systems analysis and design, database management, software and hardware concepts, decision support systems, expert systems, distributed processing and telecommunications and information systems planning. Applications of information technology will be emphasized. Prerequisite: enrollment in College of Business graduate program or consent of department, 452 or equivalent.

561-3 Database Design and Applications. Database planning, design and implementation; application of data modeling techniques-entity-relationship diagrams, hierarchical, network, relational and object-oriented data

modeling; physical design and data administration; Distributed and Expert Database Systems. Prerequisite: enrollment in College of Business graduate program or consent of department.

562-3 Information Systems and Design. Principles and concepts; strategic systems planning; tools and techniques for analysis and design; construction and quality management; reusability; methodology evaluation; full life cycle CASE tools. Prerequisite: enrollment in College of Business graduate program or consent of department.

563-3 Management of Financial Information. An overview of new database, decision support and data communications technology used in financial institutions. Topics include loan/insurance applicant analysis, trust and investment services, value at risk, derivative security management and operations issues. Prerequisite: 452 or equivalent, 532 or equivalent, 560 or equivalent, enrollment in College of Business graduate program or consent of department.

564-3 Advanced Topics in E-Commerce and Marketing. The purpose of this course is to focus and evaluate recent developments in information technology that carry far-reaching implications for marketing management. Specifically, the course will familiarize students with the complexities, challenges and opportunities associated with managing the recent explosion in the scope and availability of comprehensive, timely, and highly disaggregate, marketing information. Prerequisite: 560; enrollment in College of Business graduate program or consent of department.

570-1 to 2 (1,1) Professional Development Dimensions. To aid the professional development of M.B.A. students by providing a variety of experiences to address attitudes, values and ethical standards. Executive guest speakers, roundtable discussion, simulations and role-playing will be used. To be taken as (a) one hour and (b) one hour. Additional charges of approximately \$20 may be assessed for field trips. Prerequisite: enrollment in College of Business graduate program or consent of department.

571-1 Teaching and Research Essentials for Doctoral Candidates. This course is designed to prepare doctoral candidates within the College of Business for entry level (Assistant Professor) positions. Teaching strategies, classroom management, development of courses as well as research and publication strategies are discussed. Prerequisite: doctoral status in the College of Business. This course must be taken the second semester of the student's course work.

573-3 Planning Systems and Strategic Decisions. A critical review of theory and research on the structure, content and process of strategic decisions. The design and implementation of planning systems also is emphasized. Prerequisite: enrollment in College of Business graduate program or consent of department.

574-3 Advanced Research Methods in Business Administration. A capstone research course in business

that exposes the student to a full range of research experiences. Emphasis is on integrating learning and creative thinking in the execution of the research process. Prerequisite: enrollment in College of Business graduate program or consent of department.

574B-3 Advanced Research Methods II. This course is a practicum in advanced research methods. It will focus on analysis of data, interpretation of results and synthesis of conclusions based on a clear understanding of the objectives of research, the characteristics of data and techniques for manipulating data. Prerequisite: enrollment in College of Business graduate program or consent of department.

575-3 Seminar in Multivariate Statistics. This seminar in multivariate statistics will give doctoral students in Business Administration a theoretical and practical knowledge of multivariate methods such as cluster analysis, multiple regression, discriminant analysis, canonical analysis, etc., for the purpose of equipping them for dissertation work, and subsequent research for publication in the top academic business journals. Prerequisite: enrollment in College of Business graduate program or consent of department.

580-3 International Dimensions of Business and Management. International business and activities are examined in the international environment. The course will focus on concepts and issues of international business and will analyze the marketing, financial, accounting, managerial, logistical and production functions of international operations. Emphasis is on integrating, learning and creative thinking through lecture and case analysis. Prerequisite: enrollment in College of Business graduate program or consent of department, functional M.B.A. coursework should be completed.

581-3 Global Marketing. The basic elements of marketing management are identified in the setting of a global business environment. Emphasis is given to variables in the international markets that effect strategic business planning such as cultural, ethical, political and economic influences. The course focuses on current trends in the marketing practices of organization. Prerequisite: enrollment in College of Business graduate program or consent of department, 550 and Marketing 435 or equivalent.

582-3 International Finance. Discussion of international monetary system, parity conditions, foreign exchange markets and financial markets. Special focus on financial management of the multinational firm, including risk assessment, hedging, capital budgeting and performance evaluation and control. Not available for students with credit for FIN 464. Prerequisite: BA530. Restricted to enrollment in College of Business graduate program, or consent of department.

583-3 Global Operations Management. A study of issues and problems related to managing global operations and current practices. Topics include international operations

comparisons, international operations improvement and competitive leverage, issues critical to global operations, international cross-functional coordination, coordinating international material flow, coordinating international process and product design, among others. Prerequisite: 580, enrollment in College of Business graduate program or consent of department.

584-3 Global Business Strategies. To examine decision-making in international business via a broad study of the opportunities and problems encountered when business operations cross national boundaries; to impart current knowledge regarding the theory and practice of functional aspects of global marketing, international finance and global operations management; to focus on the multinational nature of international managerial decisions. Prerequisite: 580, enrollment in College of Business graduate program or consent of department.

588-3 to 6 Study Abroad. Provides graduate credit for study abroad accredited and approved foreign institutions. To be taken (a) first study abroad program, and (b) second study abroad program. Prerequisite: Enrollment in MBA program or consent of department.

591-1 to 15 (3 per semester per 700 number) Independent Study. Directed independent study in selected areas of business administration. May be repeated as topics vary. Prerequisite: enrollment in College of Business graduate program or consent of department.

595-1 to 6 Internship – Work Experience. Current practical experience in a business or other work directly related to course work in a College of Business program and to the student's educational objectives might be used as a basis for granting credit to the college. Credit is given when specific program credit cannot be granted and is

usable for elective credit only. Credit is sought by petition and must be approved by the CoBA dean before registration. Graded S/U or DEF only. Restricted to enrollment in College of Business graduate program or department approval.

598-3 Business Policies. Study of the development and evaluation of business strategies and policies as they relate to the overall performance of the firm within its environment. Knowledge of the functional areas of administration, available business data and analytical tools will be utilized in solving comprehensive business cases and simulation games. Prerequisite: enrollment in College of Business graduate program or consent of department.

599-3 to 6 Thesis. Prerequisite: enrollment in M.B.A. program or consent of department, consent of instructor.

600-1 to 24 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree in Business Administration. Prerequisite: advancement to candidacy for the Doctor of Philosophy degree in Business Administration.

601-1 per semester Continuing Enrollment. For those graduate students in business who have not finished their degree programs and who have one or more INCs or DEFs on their records and/or are in the process of completing their degree requirements. The student must have previously enrolled in a minimum of 36 hours of course work that meets M.B.A. program core and elective requirement or have completed a minimum of 24 hours of BA 600 before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Courses (FIN)

There is no graduate program offered through the Department of Management. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

433-3 Portfolio Theory and Management. Examination of modern concepts relating to management of security portfolios. Topics include security analysis, Markowitz Portfolio Theory, efficient market hypothesis, portfolio performance measurement, risk and portfolio construction. Prerequisite: FIN 331 with a grade of C or better, FIN 361 (361 may be taken concurrently), and junior standing.

434-3 Risk Management. This course includes a survey and application of various risk management techniques with an emphasis on commodity risk management. Topics include: pricing theories of futures and options, examination of firm risk, and the use of a trading room to simulate risk management techniques. Prerequisite: junior standing and FIN 432 or consent of department.

462-3 Working Capital Management. Liquidity analysis and management with a focus on managing cash,

marketable securities, accounts receivable, inventory, banking relationships and short-term financing. Students may choose to be associated with Corporate Treasury Management Program and may be eligible to pursue CTP certificate. Prerequisite: FIN 361 or concurrent enrollment and junior standing.

463-3 Forecasting and Capital Budgeting. Long-term forecasting techniques used in business; alternative approaches to capital structure decisions, cost of capital measurement; and performance measurement for investment decisions including mergers and leasing; explicit consideration of certainty, risk and uncertainty in investment analysis; theory and applications in private and public sectors. Prerequisite: FIN 361 or concurrent enrollment and junior standing.

464-3 International Financial Management. Examine decision-making in International Finance by studying issues encountered when investments and business operations cross national boundaries. Topics include foreign exchange markets, parity conditions, exchange rate

exposure and hedging, global financing, multinational capital budgeting, working capital management and international portfolio diversification. Prerequisite: FIN 361 or concurrent enrollment and junior standing.

469-3 Financial Analysis and Security Valuation. Study of the corporation's financial problems and their causes and solution. Emphasis given to the impact of these financial problems on how the market values securities. Topics include liquidity and leverage analysis, analysis of

profitability, and other financial analysis tools. Not available for students with credit for BA 536. Prerequisite: FIN 361 and junior standing.

480-3 Problems in Labor Law. Social, economic, and legal evaluations of recent labor problems, court decisions and legislation. Concern is on long-run legislative impact on manpower planning, dispute settlement and utilization of employment resources.

Courses (MGMT)

There is no graduate program offered through the Department of Management. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

452-3 Supply Chain Transportation and Logistics. This course examines the areas of transportation and logistics as they relate to supply chain management. Prerequisite: MGMT 318.

471-3 Seminar in Entrepreneurship. Investigation of selected special or advanced topics in seminar format.

Topics may include but are not limited to entrepreneurship, small business analysis or topics related to the ownership and management of a business. Activities will include library and field research, data analysis, report writing and active participation in seminar presentations and discussions. Designed particularly for the student who has completed the three small business courses numbered 350 and has discussed personal small business or entrepreneurial objectives with the instructor prior to registration. Prerequisite: consent of department.

Courses (MKTG)

There is no graduate program offered through the Department of Marketing. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description

401-3 Retail Management. Designed to present and integrate basic principles in decision areas such as location, layout, organization, personnel, merchandise control, pricing, sales promotion, traditional and e-commerce marketing strategies and channel development considerations. A strategic managerial perspective of retail merchandising. Prerequisite: 304 with a grade of C or better and junior standing or higher, business major or minor, or consent of department.

405-3 Brand Management. This course is about branding, and the ways brands acquire and maintain economic and non-economic value. During our time together, we will explore the origins, power, theory, meaning, relevance and practice of brands, brand development, brand metrics and brand management. Prerequisite: 304 with a grade of C or better. Restricted to College of Business majors or minors, junior standing or high; or departmental approval, required.

435-3 International Marketing. Analysis of international operations and markets. Emphasis on the factors influencing marketing to and within foreign countries and the alternative methods of operations open to international firms including e-commerce. Prerequisite: 304 with a grade of C or better and junior standing or higher, business major or minor, or consent of department.

438-3 Sales Management. Analysis of the sales effort within the marketing system. Philosophies, concepts and judgment criteria of the sales function in relation to the total

marketing program. Emphasis on the integration of computer-and Internet-based technologies in the strategic development and operations of the sales force. Prerequisite: 304, Management 304 with grades of C or better and junior standing or higher, business major or minor, or consent of department.

439-3 Business to Business Marketing. Analysis of emerging structures in resource acquisitions, product and service processing and fabrications, channel flow and customer profiling and servicing. Emphasis is on the determination of what constitutes the basis for strategic alliances, partnerships, downsizing and other structural changes designed to make business to business firms more competitive in the present age of instant communication and c-commerce options. Prerequisite: 304 and 329 with a grade of C or better and junior standing, business major or minor, or consent of department.

452-3 Physical Distribution Management. Integration of physical distribution activities of the firm into a system. Transportation and location as elements of the system. Inventories and service as constraints upon the system. Planning, operation, organization and management of the system. Prerequisite: 304 and junior standing or higher.

463-3 Advertising Management. Deals with advertising from the viewpoint of business management. Discussion of integrated marketing communication and problems of integrating advertising strategy into the firm's total marketing program. Course discusses the role of advertising in different business environments such as technology driven markets and electronic commerce. Prerequisite: 304 and 363 with a grade of C or better and

junior standing or higher, business major or minor, or consent of department.

489-3 Service Marketing. An exploration of the special challenges of services marketing, including analyzing and developing solutions for new service design and innovation; branding and selling services; service quality and customer satisfaction; infusion of services into manufacturing industries; service delivery and distribution including through intermediaries and electronic channels; self-service technology and smart services; pricing and ROI of services; and service failure and recovery. Prerequisite: 304 with a grade of C or better. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

490-3 Marketing Evaluation and Metrics. The course teaches mathematical tools to aid in the decision-making that occurs in many if not most marketing positions. Students will apply basic economic, financial, and accounting techniques to solve marketing problems. Prerequisite: MKTG 304 with a grade of C or better, MATH 139, ACCT 220 & 230, FIN 330, MGMT 208, MGMT 345. Restricted to College of Business majors or minors, junior standing or higher.

493-3 Marketing Policies. Integrates all marketing concepts discussed in core required marketing courses. The course is aimed at developing the student's ability to

think comprehensively, and to apply marketing concepts in traditional and e-commerce business environments through analysis of strategic marketing problems. Prerequisite: 305, 329, 363 and 390. Must be a marketing major or obtain consent of the department.

496-3 Field Seminar in International Business. Coursework and field study related to international business issues. Students will complete coursework on campus and then travel to international locations (e.g., Europe, Asia, or South America) for scheduled business visits with companies operating in those locations (both international and domestic businesses). Students will also complete additional report writing upon return from their international trip. Fees: package cost for air transportation, land travel in and between countries, lodging, and some meals, in addition to tuition and on-campus costs. Prerequisites: MKTG 304. Restrictions: College of Business majors or minors, junior standing or higher; or departmental approval required.

497- 3 to 9 (3,3,3) Special Topics in Marketing. An exploration of selected current topics in marketing, with an emphasis on covering a specific area in great depth. Topics are announced in advance; both students and faculty may suggest ideas. Students may repeat enrollment in the course as the topic varies

CENTER FOR THE STUDY OF CRIME, DELINQUENCY, AND CORRECTIONS

(See Criminology and Criminal Justice for program description.)

CHEMISTRY

www.chem.siu.edu/index.html
chemistry@chem.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Bausch, Mark J., Associate Professor, Ph.D., Northwestern University, 1982; 1987. Organic radical anion basicities, radical acidities, stability of organic cations.

Beyler, Roger E., Professor, *Emeritus*, Ph.D., University of Illinois, 1949; 1959.

Caskey, Albert L., Associate Professor, *Emeritus*, Ph.D., Iowa State University, 1961; 1964.

Dave, Bakul, Associate Professor, Ph.D., University of Houston, 1993; 1996. Inorganic and organic nanocomposites, solgel based materials, bioinorganic chemistry.

Du, Zhihua, Assistant Professor, Ph.D., University of Texas-Austin, 1997; 2009.

Dyer, Daniel J., Associate Professor, Ph.D., University of Colorado, 1996; 1998. Design and synthesis of organic materials and polymers.

Gao, Yong, Associate Professor, Ph.D., University of Alberta, 1998; 2000. Bio-organic chemistry; medicinal chemistry; bio-materials.

Ge, Qingfeng, Associate Professor, Ph.D., Tianjing University, 1991; 2003. Physical/Materials Chemistry, computational chemistry, surface science, kinetics and catalysis, biomaterials and biocatalysis.

Goodson, Boyd M., Associate Professor, Ph.D., University of California, Berkeley, 1999; 2002. Structure and dynamics of molecules and proteins, optical/nuclear double resonance, NMR and MRI, quantum computation.

Hadler, Herbert I., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1952; 1966.

Hinckley, Conrad C., Professor, *Emeritus*, Ph.D., University of Texas, 1964; 1966.

Hou, Yuqing, Research Assistant Professor, Ph.D., Southern Illinois University Carbondale, 1997; 1998.

Huff-Hartz, Kara, Assistant Professor, Ph.D., Purdue University, 2002; 2006. Analytical.

Kinsel, Gary R., Professor and *Chair*, Ph.D., University of Colorado Boulder, 1989; 2005. Analytical Chemistry, MALDI and ESI mass spectrometry, RF plasmapolymers, biomaterials, proteomics, microfluidics, surface analysis.

Kohli, Punit, Assistant Professor, Ph.D., Michigan State University, 2000; 2004. Bio-nanoscience, transport through nanotubes, materials and surface chemistry.

Koropchak, John A., Professor, and *Vice Chancellor for Research and Dean of Graduate School*, Ph.D., University of Georgia, 1980; 1984. Analytical, atomic spectroscopy, metal speciation, separations detection, condensation nucleation light scattering detection, single molecule detection, capillary separations.

Koster, David F., Professor, *Emeritus*, Ph.D., Texas A&M University, 1965; 1967.

Lee, Brian, Assistant Professor, Ph.D., University of Maryland, 1997; 2006. Biochemistry.

McCarroll, Matthew E., Associate Professor, Ph.D., University of Idaho, 1998; 2000. Analytical, molecular spectroscopy, fluorescence sensors, chiral and molecular recognition, capillary electrophoresis.

Means, Jay C., Professor and *Dean of College of Science*, Ph.D. DABT, University of Illinois-Urbana, 1976, 2007. Toxicology and Analytical Chemistry

Meyers, Cal Y., Professor, *Emeritus*, Ph.D., University of Illinois, 1951; 1964.

Perez-Alvarado, Gabriela, Assistant Professor, Ph.D., University of Maryland, 1995; 2006. Biochemistry.

Smith, Gerard V., Professor *Emeritus*, Ph.D., University of Arkansas, 1959; 1966

Tolley, Luke T., Assistant Professor, Ph.D., University of North Carolina, 2001; 2003. Analytical Chemistry, chromatography, capillary electrophoresis, mass spectroscopy, intercellular signaling biomarkers.

Trimble, Russell F., Professor, *Emeritus*, Ph.D., Massachusetts Institute of Technology, 1952; 1954.

Tyrrell, James, Professor, *Emeritus*, Ph.D., University of Glasgow, 1963; 1967.

Wang, Lichang, Associate Professor, Ph.D., University of Copenhagen, 1993; 2001. Physical, theoretical/ computational chemistry, transition metal nanoparticles, polymers, and biomolecules.

Programs leading to the Doctor of Philosophy and Master of Science degrees may be undertaken in the general areas of analytical, materials, inorganic, organic, and physical chemistry.

The doctoral degree in chemistry is a research degree. To be awarded this degree, the student must demonstrate, to the satisfaction of the graduate committee, the ability to conduct original and independent research within some area of chemistry and must, in fact, make an original contribution to the science. The master's degree also requires

a research project, but with less emphasis on originality and independence.

Admission. Each student must have a baccalaureate degree in one of the sciences, mathematics, or engineering to be considered for admission to an advanced degree program.

An undergraduate major in chemistry, with the following courses, is desirable:

1. One year of organic chemistry (lecture and laboratory).
2. One year of calculus-based physical chemistry (lecture and laboratory).
3. One year of analytical chemistry including instrumental analysis.

Students with deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and lead to requirements for additional courses during graduate study.

Prospective students are encouraged to contact faculty in areas of the students' research interest.

Applicants are strongly encouraged to submit Graduate Record Examination (GRE) general and chemistry test scores.

Foreign students whose native language is not English will be required to obtain at least 550 paper score, 220 computer score, on the Test for English as a Foreign Language (TOEFL).

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Chemistry and Biochemistry. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Placement Examinations. During the week before the beginning of classes, each admitted student is given written examinations (ACS standard or equivalent examination) in the five divisions of chemistry: analytical, inorganic, organic, physical, and biochemistry. Every student is required to take at least three exams. The results of these examinations are used to advise the student regarding any deficiencies to be corrected, and to place the student in appropriate courses as determined by a Graduate Student Advisory Committee. Therefore, we strongly encourage and expect all beginning students to review the appropriate undergraduate material before taking these examinations. Failure to pass the exams will generally require that the student take some remedial coursework.

Introduction to Research Techniques. All graduate students must register for CHEM 592, Introduction to Research, during the first fall semester in residence.

Minimum Registration. All students admitted to the department will register for a minimum of 9 credit hours every semester in residence except during the first semester, summer sessions, and while registered for CHEM 601 only. In the first semester, the students must register for a minimum of 6 credit-hours, and in every summer session, a minimum of 3 credit-hours. Registration for less than this requirement is not considered satisfactory progress toward a degree.

Formal Course Work Requirement. Each student must complete the courses specified by the student's graduate committee in the program of study.

The minimum course requirement for Master's students follows the "2+1" format. All master's students must take for credit at least two courses (six semester hours) within the student's major field and at least one (three semester hours) from outside the major field. Typically 500-level courses are required to meet this requirement. Chemistry 594, special readings, cannot be used to meet this requirement. A student's graduate committee may increase any of these departmental course requirements.

The minimum course requirement for doctoral students follows the "2+2" format. All doctoral students must take for credit at least two courses (six semester hours) within the student's major field and at least two courses (six semester hours) from outside the major field. Typically 500-level courses are required to meet this requirement. Chemistry 594, special readings, cannot be used to meet this six hour requirement. Courses taken while in the master's program may be applied to these department course requirements. A student's graduate committee may increase these course requirements.

For a student working in a cross-divisional area, the committee will design an appropriate program of study in consultation with the Graduate Advisor and the faculty of the divisions involved.

Students in the doctoral program must present 3 departmental seminars for credit (CHEM 595). These include one based on a literature review, the second on the topic of an original research proposal, and the final seminar on the student's own research. Only the last 2 seminars are required of students entering the doctoral program with a recognized master's degree. Students in the master's program must present 1 departmental seminar for credit.

All students must take 1 hour of CHEM 597, Professional Training, each semester in residence.

Research Director and Graduate Committee Selection. Each student must select a research director and graduate committee preferably during the first semester, but no later than the end of the second semester in residence. The student must obtain a selection form provided by the graduate adviser and must interview at least 4 faculty members before selecting a research director and graduate committee. For a master's candidate, the committee shall consist of the research director (chair), at least 1 member of the major division other than the research director, and at least 1 member outside the major division. For a Ph.D. candidate, the committee is identical except that at least 1 member outside the department is included. The chair of the Department of Chemistry and Biochemistry, if not otherwise appointed, is an ex-officio member of every graduate committee. A division may increase this requirement.

Graduate Committee Functions. The functions of the graduate committee are listed below.

1. To plan and approve the student's program of study.
2. To review the student's progress in courses and suggest and approve changes in the program of study.
3. To evaluate the student's progress in research and to make appropriate recommendations.
4. To determine whether a student may continue toward a degree. If continuation is denied, the committee must notify in writing the department chair of the reasons for this denial.
5. To read and evaluate the student's thesis or dissertation.
6. To conduct required oral examinations.

As soon as possible after being appointed, the committee will meet to plan the student's program. At this time the progress and program form is completed and filed with the graduate adviser. The committee may require preparation of a master's thesis even if directly pursuing a Ph.D. degree has been previously approved by the faculty.

Research Tools. The department requires specific research tools, which may differ among divisions. A student's graduate committee, taking into account the student's background and the needs of the research area, may require that the student acquire one or more research tools (e.g., foreign language, computer programming, statistics, and so on). Any research tool requirement must be completed before scheduling the preliminary oral examination for doctoral degree students or the final oral examination for master's degree students.

Assistantship Support. Continuation of assistantship support is contingent upon the student making satisfactory progress toward a degree. In addition, continuation of teaching assistantship support depends upon satisfactory performance of assigned duties. The Graduate School has established time limits for financial support.

First Year Evaluation. The faculty, meeting as a committee of the whole, will review the progress of all graduate students at the end of their first year in residence. For students in the doctoral program the faculty can:

1. recommend continuation in the doctoral program.
2. recommend transfer to a terminal master's degree program.
3. request that the Graduate School terminate the student from the program (giving cause).

For students in the master's program the faculty can:

1. recommend petitioning the Graduate School to allow entry to the doctoral program (accelerated entry option). Such petition can be made any time after one semester in residence.
2. recommend continuation in the master's program with the option to petition the Graduate School to grant a master's degree equivalency. When granted,

this allows the student to apply for entrance to the doctoral program without writing and defending a thesis.

3. recommend continuation in the master's program with option to petition to enter the doctoral program after completion of a master's thesis.
4. recommend continuation in a terminal master's program.
5. request that the Graduate School terminate the student from the program (giving cause).

Preliminary Examination for the Ph.D. Degree.

Each student in the doctoral program must pass a preliminary examination before being advanced to candidacy. The written portion of the preliminary examination is given cumulatively with 10 examinations scheduled each calendar year. The student must pass 4 examinations in no more than 10 consecutive trials. Students must begin cumulative examinations at the start of their second calendar year or immediately on admission to the doctoral program if one calendar year has already been completed in the master's program. After the student completes the cumulative examinations, the preparation and defense of an original research proposal will serve as the oral portion of the preliminary examination.

Summary of Ph.D. Degree Requirements. Each student must fulfill the requirements of both the Graduate School and the Department of Chemistry and Biochemistry. These requirements are:

1. to obtain three passes in placement exams.
2. to take 1 hour of CHEM 592 during the first fall semester in residence.
3. to take 1 hour of CHEM 597 each semester in residence.
4. to fulfill the divisional course requirements.
5. to earn at least 32 semester hours in research and dissertation (CHEM 598 and 600). At least 24 of these hours must be in CHEM 600.
6. to attend weekly seminars and earn 2 semester hours of CHEM 595 beyond the master's degree requirement by presenting departmental seminars.
7. to maintain at least a 3.00 grade point average.
8. to complete a course of study as determined by the graduate committee.
9. to satisfy any research tool requirement established by the student's graduate committee.
10. to pass a series of cumulative examinations which shall serve as the written portion of the preliminary examination.
11. to prepare and defend an original research proposal which shall serve as the oral portion of the preliminary examination.
12. to complete a research project and to prepare a dissertation acceptable to the student's graduate committee and the Graduate School.
13. to schedule and pass a final oral examination (defense of dissertation).

Summary of Master's Degree Requirements. Each student must fulfill the requirements of both the Graduate School and the Department of Chemistry and Biochemistry. These requirements are:

1. to obtain three passes in placement exams.
2. to take 1 hour of CHEM 592 during the first fall semester in residence.
3. to take 1 hour of CHEM 597 each semester in residence.
4. to fulfill the divisional course requirements.
5. to earn at least 30 semester hours at the 400/500 level, at least 15 of which are at the 500 level. At least 21 of the 30 hours must be graded A, B, or C.

6. to attend weekly seminars and earn 1 semester hour of CHEM 595 by presenting a departmental seminar.
7. to earn at least 8 semester hours in research and thesis (CHEM 596, 598, and 599). At least 3 of these hours must be CHEM 599.
8. to maintain at least a 3.00 grade point average.
9. to satisfy any research tool requirement established by the student's graduate committee.
10. to prepare and present a thesis on the research carried out and to schedule and pass a final oral examination.

Courses (CHEM)

All laboratory courses in chemistry and biochemistry require the student to purchase either special notebooks or workbooks, costing within the range of \$1.50 to \$8.50. All students enrolled in a chemistry class that includes a laboratory session will be assessed a breakage charge for all glassware broken. This policy will apply to undergraduate and graduate students

411-3 Intermediate Inorganic Chemistry. Fundamentals of inorganic chemistry, covering bonding and structure, coordination compounds and the chemistry of some familiar and less familiar elements. Three lectures per week. Prerequisite: 456 or 462 or concurrent enrollment. Offered spring semester only.

431-3 Environmental Chemistry. Chemical principles applied to the environment and environmental problems. Chemical kinetic, thermodynamic and equilibrium concepts as they relate to the atmosphere, water and soil will be discussed to include current problems of pollutants, pollutant evaluation and pollutant remediation. Discussion of methods for the chemical analysis of environmental samples will also be included. Prerequisite: C or better in 230 and 340. Offered spring semester in even years only.

434-2 or 4 Instrumental Analytical Chemistry. Theory and practice of instrumental measurements, including emission and absorption spectroscopic, capillary electrophoretic and chromatographic methods. Two lectures and two three-hour laboratories per week for four credits. Enrollment for two credit hours is restricted to graduate students in the Department of Chemistry and Biochemistry who are advised to take instrumental analysis. Laboratory fee: \$40. Prerequisite: C or better 230. Offered fall semester only.

439-3 Forensic Chemistry. A one semester course in the analysis of forensics samples. Topics include sample collection and preservation, chain of custody, data validation and reports, and analytic methods which may include (as time permits) chromatography, mass spectroscopy, fluorescence and absorbance spectroscopy, fingerprint identification, and scanning electron and light microscopy. One lecture and one six-hour laboratory meeting per week. Enrollment is limited with preference given to students with

high academic standings. Laboratory fee: \$40. Prerequisite: C or better in 230 and 434. Offered spring semester only.

444-3 Intermediate Organic Chemistry. A transitional course between introductory and graduate level chemistry. The chemistry of carbon compounds based upon a mechanistic approach will be discussed. Three lectures per week. Prerequisite: C or better in 340, 342. Offered fall semester only.

451-6 (3, 3) Biochemistry. (Same as Microbiology 451, Biochemistry 451 and Molecular Biology, Microbiology and Biochemistry 451) (a) Chemistry and function of amino acids, proteins and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a,b sequence. Prerequisite: one year of organic chemistry.

452-3 Structure and Function. This course will cover the structural basis of biomolecules with an emphasis on the chemical and physical aspects involved in the architecture of proteins and nucleic acids. The study of the physical properties of biomolecular interactions and assembly of biomolecules into macromolecular complexes will be covered. Interpretation of data from atomic resolution techniques will be discussed. Prerequisites: 350 or 451a/b and 461/462 or equivalent.

456-3 Biophysical Chemistry. (Same as Biochemistry 456 and Molecular Biology, Microbiology and Biochemistry 456) A one-semester course in biophysical chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisite: 340 and 342, 451a or concurrent enrollment, Mathematics 141 or 150.

461-3 Quantum Mechanics and Spectroscopy. An introduction to quantum mechanics and spectroscopy. Prerequisite: Mathematics 250; C or better in 230, 340, 341; Mathematics 221 or 305 is recommended as prerequisite or concurrent enrollment.

462-3 Classical Physical Chemistry. An introduction to chemical, statistical thermodynamics and kinetics. Prerequisite: Mathematics 250; *C* or better in 230, 340, 341; Mathematics 221 or 305 is recommended as prerequisite or concurrent enrollment. Offered spring semester only.

466-2 (A, B) Physical Chemistry Laboratory. A two-semester laboratory sequence. One three-hour laboratory per week per semester. (a) Experiments relating to topics covered in 462 Prerequisite: 462 or 456 or concurrent enrollment. (b) Experiments relating to topics covered in 461. Laboratory fee: \$40. Prerequisite: 461 or concurrent enrollment. 466a offered spring semester only. 466b offered fall semester only.

468-3 Application of Symmetry to Chemistry. The concepts of symmetry elements, groups and character tables will be taught. Symmetry will be applied to molecules in order to simplify and characterize their wave functions and vibrational frequencies. Prerequisite: *C* or better in 461 or consent of instructor. Offered spring semester in odd years only.

479-3 Principles of Materials Chemistry. Introduction to fundamental concepts of materials chemistry. Synthesis, characterization, processing and applications of different materials including solids, polymers, ceramics and molecularly designed materials. Prerequisite: 411, 462 or concurrent enrollment, or consent of instructor. Offered fall semester in odd years only.

489-1 to 3 Special Topics in Chemistry. Prerequisite: consent of instructor and of chair.

506-3, Chemistry Topics for Teachers. This graduate-level chemistry course covers topics, methods and activities that target the needs of elementary and middle school science teachers. The course consists of a combination of lectures and laboratory experiments. The specific subjects covered during the course change, depending on the needs of the current students. This course may only be taken as part of an approved major. Prerequisite: consent of instructor.

511-6 (3,3) Advanced Inorganic Chemistry. (a) Principles of group theory and their application to molecular structure, ligand field theory and its application and magnetic properties of matter. (b) Energetics, kinetics and mechanisms of inorganic systems. Prerequisite: one year of physical chemistry, 411.

519-1 to 9 (1 to 3 per semester) Advanced Topics in Inorganic Chemistry. Metal ions in biological processes and other selected topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

531-3 Introduction to Analytical Separations. An introduction to the basic principles underlying separation science, with emphasis on all major chromatographies, gel and capillary electrophoresis, isoelectric focusing, field-flow fractionation, rate and isopycnic sedimentation, filtration, reverse osmosis and related methods. Prerequisite: Mathematics 250.

532-3 Analytical Chemistry Instrumentation. Introduction to analog and digital electronics and the computer control of system components. The course will focus on chemical instrumental and the use of filters, amplifiers and digital signal processing to improve sensitivity and detection limits. Two lectures and one three-hour laboratory per week. Prerequisite: 434.

533-3 Analytical Spectroscopy. Fundamental and experimental aspects of electronic and vibrational spectrometry, with a particular emphasis on the spectroscopic analysis of atomic and molecular species. Various sources of electromagnetic radiation, detectors, optical components and the optimization of experimental methods are covered in detail. Common spectroscopic techniques are covered in detail and a portion of the course covers newly emerging techniques and developments. Prerequisite: 434.

534-3 Electrochemistry. Fundamentals and applications of electrochemical methods, with emphasis on the thermodynamics and kinetics of electron transfer, electrode double-layer structures, as well as varied voltammetric techniques. Prerequisite: 462.

535-3 Advanced Analytical Chemistry. Course surveys various statistical, data-manipulative, and numerical methods as applied to analytical chemistry, including probability distributions, methods of maximum likelihood, linear and nonlinear least squares, correlation coefficients, chi-square, *F* and *T* distributions, Pearson statistics, analysis of variance, convolution, deconvolution, cross-correlation, autocorrelation, data acquisition, Nyquist theorem, aliasing, digitization errors, digital filtering, Monte Carlo methods, and finite-difference equations. Prerequisite: 434.

536-3 Principles of Mass Spectrometry. This course is an introduction to mass spectrometry with a focus on pharmaceutical and biological applications. Topics that will be covered include instrument design, ionization techniques, tandem mass spectrometry, chromatography/mass spectrometry and mass spectral interpretation. Prerequisite: 434.

537-3 Fluorescence Spectroscopy. Fundamental and experimental aspects of analytical methods based on the various phenomena of luminescence. General principles of luminescence are covered in detail, as well as analytical techniques based on fluorescence quenching, energy transfer, polarization, and time resolved methods. Aspects of source of electromagnetic radiation, detectors, and electronic/optical components are discussed specifically as they pertain to fluorescence spectroscopy. Newly emerging fluorescence based techniques are also discussed. Prerequisite: 434 and 533 (or consent of the instructor).

538-3 Nanoscale Probing and Imaging. This course covers basic principles of scanning probe microscopy and spectroscopy including STM, AFM, ACM and NSOM, and the broad applications in nanoscale probing and imaging. Topics include surface characterization and manipulation, nanolithography, nanomaterials, self-assembly, molecular electronics, optoelectronics, nanoscale electron transfer, single-molecular spectroscopy, protein structures, enzyme

dynamics, and living cell imaging. Prerequisite: undergraduate physical and analytical chemistry.

539-1 to 9 (1 to 3 per semester) Advanced Topics in Analytical Chemistry. Selected topics of interest to practicing analytical chemists such as microanalytical chemistry, functional-group chemical determinations, absorption spectroscopy and electroanalytical chemistry. Maximum credit nine semester hours. Prerequisite: 434.

541-3 Organic Structure and Reactivity. Structure and reactivity of organic compounds: steric, electronic, kinetic and thermodynamic aspects and their relation to reactive intermediates.

542-3 Mechanistic Organic Chemistry. Reaction mechanisms in organic chemistry. Electrocyclic and sigmatropic reactions, cycloadditions, free radicals, photochemistry and organometallic catalysis. Spectroscopic methods. Orbital symmetry, photochemistry and the chemistry of the common transient intermediates. Prerequisite: Master's degree in chemistry, or a grade of B or better in 444, or passing grade on the organic placement examination.

543-3 Synthetic Organic Chemistry. Organic synthesis: classical and modern methods.

549-1 to 9 (1 to 3 per semester) Advanced Topics in Organic Chemistry. Specialized topics in organic chemistry. The topic to be covered is announced by the department. Maximum credit nine semester hours. Prerequisite: 542.

552-3 Biomolecular Structure and Function. This course will cover the structural basis of biomolecules with an emphasis on the chemical and physical aspects involved in the architecture of proteins and nucleic acids. The study of the physical properties of biomolecular interactions and assembly of biomolecules into macromolecular complexes will be covered. Interpretation of data from atomic resolution techniques will be discussed. Prerequisites: 350 or 451a/b and 461/462 equivalent.

559-1 to 3 Advanced Topics in Biological Chemistry. Specialized topics in biological chemistry. The topic to be covered is announced by the department. Maximum credit nine semester hours (1 to 3 per semester). Prerequisite: C or better in 350 or 451a, b or equivalent.

560-3 Introduction to Quantum Chemistry. Basic principles and applications of quantum mechanics to chemistry. Topics include operator and vector algebra, classical mechanics, angular momentum, approximate methods, hydrogen-like atoms and molecular electronic structure. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry.

561-3 Molecular Orbital Theory. An introduction to molecular orbital theory. Applications and limitations of various methods. Three lectures per week. Prerequisite: one year of undergraduate physical chemistry including quantum mechanics.

562-3 Advanced Molecular Spectroscopy. Theory of rotational and vibrational spectroscopy, electronic spectroscopy of molecules. Three lectures per week. Prerequisite: 468 or consent of instructor.

564-3 Statistical Thermodynamics. Principles of statistical mechanics and applications to equilibrium and nonequilibrium systems. Topics include ideal gases, monatomic crystals, lattice statistics, the cluster method, correlation functions, Brownian motion, the Boltzmann equation and the Kubo-Green technique. Three lectures per week. Prerequisite: 461 and 462 or consent of instructor.

569-1 to 9 (1 to 3 per semester) Advanced Topics in Physical Chemistry. Topic to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

575-3 Methods of Materials Characterization. An introduction to the structural, morphological, spectroscopic, and thermal characterization techniques commonly used in materials chemistry. Prerequisite: consent of instructor.

579-3 Topics in Advanced Materials. Design and applications of advanced materials. Special topics will focus on contemporary research areas of interest as determined by the instructor. Prerequisite: consent of instructor.

592-1 Introduction to Research. Introduction to the techniques and methods of chemical research including good laboratory practice, research ethics, record keeping, publication, patents and currently active research in this department. Graded S/U only.

593-1 Graded Seminar. Seminar presentations on advanced topics given in partial fulfillment of the requirements for the MS and PhD degrees in Chemistry. (a) Literature Seminar, (b) Independent Proposal Presentation, (c) Research Seminar.

594-2 to 3 Special Readings in Chemistry. Assigned library work in any of these fields of chemistry with individual instruction by a staff member. (a) Analytical, (c) Inorganic, (d) Organic, (e) Physical. Maximum credit three hours.

595-1 Advanced Seminar in Chemistry. Advanced level talks presented by graduate students. (a) Analytical, (c) inorganic, (d) organic, and (e) physical chemistry.

596-1 to 6 (1 to 3 per semester) Master's Degree Research. Graded research for Master's Degree only. Maximum 6 credit hours. Prerequisite: admission to Master's program in Chemistry and Biochemistry. Completion of at least 9 hours of graded graduate course work in the program. Permission of student's graduate advisory committee.

597-1 to 15 Professional Training. Experience in teaching of chemistry, instrument operation and special research projects. One hour required each semester in residence. Graded S/U only. Prerequisite: graduate standing.

598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours, except by permission of the student's graduate advisory committee. Graded S/U only. Prerequisite: consent of chair.

599-1 to 6 Thesis. Maximum credit six hours. Prerequisite: consent of chair.

600-1 to 30 (1 to 12 per semester) Dissertation—Doctoral. Requirement for Ph.D. degree, 24 hours. Maxi-

mum credit 30 hours, except by permission of the student's graduate advisory committee. Prerequisite: 598.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

CINEMA AND PHOTOGRAPHY

(See Mass Communication and Media Arts for program description.)

CIVIL AND ENVIRONMENTAL ENGINEERING

<http://civil.engr.siu.edu>cedept@engr.siu.edu

COLLEGE OF ENGINEERING

Graduate Faculty:

Blackburn, James W., Professor, Ph.D., University of Tennessee, Knoxville, 1988; 1995. Biokinetics, biotechnology, chemical and bioprocesses reduction and control of organic waste / by-products; pollution prevention through tuning complex chemical processes and bioprocesses treatment of waste and wastewater, scale-up and application of bioremediation processes, reduction or control of organic air emissions.

Bravo, Rolando, Associate Professor, Ph.D., University of Houston, 1990; 1991. Surface and subsurface hydrology, hydraulics and fluid mechanics.

Butson, Gary J., Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 1981; 1992. Mechanics of materials, vibrations, solid mechanics.

Chevalier, Lizette R., Professor, Ph.D., Michigan State University, 1994; 1995. Environmental restoration of groundwater aquifers, experimental investigation of immiscible flow, and numerical modeling of subsurface transport.

Cook, Echol E., Professor, *Emeritus*, Ph.D., Oklahoma State University, 1970; 1971.

Craddock, James N., Associate Professor, *Emeritus* Ph.D., University of Illinois, 1979; 1980. **Davis, Philip K.**, Professor, *Emeritus*, Ph.D., University of Michigan, 1963; 1964.

DeVantier, Bruce A., Associate Professor, Ph.D., University of California-Davis, 1983; 1983. Water quality modeling, sediment transport, turbulence modeling, finite element methods.

Evers, James L., Associate Professor, *Emeritus*, Ph.D., University of Alabama, 1969; 1969.

Hsiao, J. Kent, Associate Professor, Ph.D., University of Utah— Salt Lake City, 2000; 2001. Structural earthquake engineering, structural reliability, structural design of buildings and bridges using steel, reinforced or prestressed concrete, masonry, and wood.

Kassimali, Aslam, Professor and *Distinguished Teacher*, Ph.D., University of Missouri, 1976; 1980. Structural

engineering, nonlinear structural analysis, structural dynamics and stability.

Kumar, Sanjeev, Professor, *Distinguished Teacher and Chair*, Ph.D., University of Missouri-Rolla, 1996; 1998. Dynamic soil-structure interaction, piles under lateral loads, settlement prediction of landfills, hydraulic conductivity of clay barriers, seismic analysis and design of landfills, ground motion amplification in soils, liquefaction of silts and sands and machine foundations.

Liang, Yanna, Assistant Professor, Ph.D., Utah State University, 2006; 2007.

Ma, Samuel, Assistant Professor, Ph.D. Missouri University of Science and Technology, 2004, 2007.

Nicklow, John W., Professor and *Associate Dean* of the College of Engineering, Ph.D., Arizona State University, 1998; 1998. Water resources and hydraulic engineering, application of operations research to water resources systems, sediment transport, applied hydrology.

Nowacki, C. Raymond, Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1965; 1963.

Puri, Vijay K., Professor, Ph.D., University of Missouri-Rolla, 1984; 1986. Geotechnical engineering, soil dynamics, machine foundations, liquefaction of soils.

Ray, Bill T., Associate Professor, *Emeritus*, Ph.D., University of Missouri-Rolla, 1984; 1985.

Rubayi, Najim, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1966; 1966.

Sami, Sedat, Professor, *Emeritus*, Ph.D., University of Iowa, 1966; 1966.

Tezcan, Jale, Assistant Professor, Ph.D., Rice University, 2005; 2005. Non-linear structural behavior, neural networks In system identification and structural control, rehabilitation, and retrofitting of structures damaged by earthquakes.

Wilkerson, Gregory, Assistant Professor, Ph.D. Colorado State University, 1999; 2008.

Yen, Max Shing-Chung, Professor and Director, Materials Technology Center, Ph.D., Virginia Polytechnic Institute, 1984; 1984. Composite materials, experimental mechanics, solid mechanics, and structural dynamics

Master of Science Degree in Civil Engineering

Graduate work leading to the Master of Science degree in civil engineering is offered by the College of Engineering. The program provides advanced study in the areas of structural engineering, environmental engineering, geotechnical engineering, hydraulic and water resources engineering, and structural engineering.

Admission

The Department of Civil and Environmental Engineering requires that applicants to the master's program hold a bachelor's degree in civil or environmental engineering (or equivalent), or have completed all undergraduate degree requirements prior to registration, with minimum grade point average (GPA) of 3.0 (A=4.0) for the last 60 hours of undergraduate work. Students having a GPA less than a

3.0 will be considered on a case-by-case basis. A student whose undergraduate training is deficient may be required to take additional coursework without graduate credit. All applicants are required to submit GRE scores in support of their applications for admission (minimum scores: 400 Verbal, 570 Quantitative, 3.5 Analytical Writing). The GRE scores must be less than five years old at the time of registration. Minimum requirements for GRE verbal and analytical writing may be waived if the student's TOEFL score is greater than 570 (test center), 230 (computer based) or 82 (internet based), and he/she possesses good communication skills.

Prospective students are strongly encouraged to apply on-line at <http://www.gradschool.siu.edu/applygrad.html>. You will be prompted to submit a non-refundable application fee of \$50.00 via credit card. In the absence of reliable internet connection, please contact the department for hardcopy application documents. The application fee may also be submitted in the form of a money order and/or cashier's check, payable to Southern Illinois University at a United States bank. Do not send cash. Please send the money order and/or cashier's check directly to the department.

Requirements

A graduate student in the Department of Civil and Environmental Engineering is required to develop a program of study with a graduate adviser and establish a graduate committee of at least three members before the end of his/her's first semester in the graduate program. Each student majoring in civil and environmental engineering may, with the approval of the graduate committee, also take graduate level courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

A minimum of thirty semester hours of acceptable graduate credit is required, including a minimum of three semester hours of CE 599 Thesis. Of this total, eighteen semester hours must be earned in the Department of Civil and Environmental Engineering. Furthermore, at least fifteen semester hours must be 500-level and completed at Southern Illinois University Carbondale. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work, including a thesis.

Each student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the Chair of the Civil and Environmental Engineering Department. The committee will:

1. approve the student's program of study;
2. approve the student's thesis topic;
3. approve the completed thesis;
4. administer and approve the comprehensive oral examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Civil and Environmental Engineering.

Master of Engineering Degree in Civil and Environmental Engineering

The Master of Engineering degree (ME) in Civil and Environmental Engineering is a non-thesis, course only professional degree designed to provide advanced technical knowledge for professional practice. The program provides advanced study in the areas of structural engineering, environmental engineering, geotechnical engineering, and water resources engineering.

Admission

The Department of Civil and Environmental Engineering requires that applicants to the master's program hold a bachelor's degree in civil or environmental engineering (or equivalent), or have completed all undergraduate degree requirements prior to registration, with minimum grade point average (GPA) of 3.0 (A=4.0) for the last 60 hours of undergraduate work. Students having a GPA less than a 3.0 will be considered on a case-by-case basis. The GRE is not required for students applying to the ME degree program.

Prospective students are strongly encouraged to apply on-line at <http://www.gradschool.siu.edu.html>. You will be prompted to submit a non-refundable application fee of \$50.00 via credit card. In the absence of reliable internet connection, please contact the department for hardcopy application documents. The application fee may also be submitted in the form of a money order and/or cashier's check, payable to Southern Illinois University at a United States bank. Do not send cash. Please send the money order and/or cashier's check directly to the department.

Requirements

A ME graduate student in civil and environmental engineering is required to develop a program of study with a graduate adviser and establish a graduate committee of at least three members before the end of his/her first semester in the graduate program. Each student majoring in civil and environmental engineering may, with the approval of the graduate committee, also take graduate level courses in other branches of engineering or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science.

Each student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the Chair of the Civil and Environmental Engineering Department. The committee will:

1. approve the student's program of study;
2. approve the student's engineering project topic;
3. approve the completed engineering project and report

For graduation, the ME student is required to complete thirty semester hours including CE 593 Civil Engineering Project. Of this, eighteen semester hours must be earned in the Department. Furthermore, at least fifteen semester

hours must be 500-level and completed at Southern Illinois University Carbondale.

The ME program permits students to complete an advanced degree in three semesters (12 credit hours Fall, 12 credit hours Spring, 6 credit hours Summer). This is a non-research degree, teaching or research assistantships are not available for students pursuing this degree, nor would this be a suitable track to pursue a Ph.D.

Courses (CE)

410-3 Solid Waste Engineering. Engineering aspects of solid waste prevention, treatment, recycling and disposal. Design of recycling programs, solid waste treatment and disposal facilities. State and federal regulations. Problems, sources, and effects of solid waste. Design projects required. Prerequisite: 310.

412-3 Contaminant Flow, Transport and Remediation in Porous Media. Mathematics of flow and mass transport in the saturated and vadose zones; retardation and attenuation of dissolved solutes; flow of nonaqueous phase liquids; review of groundwater remediation technologies; review of flow and transport models. Prerequisite: CE 310 and 320.

413-3 Collection Systems Design. Design of wastewater and storm water collection systems including installation of buried pipes. Determination of design loads and flows, system layout and pipe size. Prerequisite: 310 and 370a.

418-3 Water and Wastewater Treatment. A study of the theory and design of water and wastewater treatment systems, including physical, chemical, and biological processes. Topics include sedimentation, biological treatment, hardness removal, filtration, chlorination and residuals management. Prerequisite: 310, 370 and Engineering 351.

419-3 Advanced Water and Wastewater Treatment. Advanced concepts in the analysis and design of water and wastewater treatment plants. Topics include advanced physical, chemical and biological processes. Emphasis is on the treatment and disposal of sludges, design of facilities, advanced treatment principles, and toxics removal. Prerequisite: 418.

421-3 Foundation Design. Application of soil mechanics to the design of the foundations of structures; subsurface exploration; bearing capacity and settlement analysis of shallow foundations; lateral earth pressures and design of retaining walls; capacity and settlement of pile foundations for vertical axial loads. Prerequisite: CE 320.

422-3 Environmental Geotechnology. Geotechnical aspects of land disposal of solid waste and remediation, solute transport in saturated soils, waste characterization and soil-waste interaction, engineering properties of municipal wastes, construction quality control of liners, slope stability and settlement considerations, use of geosynthetics and geotextiles, cap design, gas generation, migration and management. Prerequisite: 310 and 320.

431-3 Pavement Design. Design of highway and airport systems: subgrades, subbases, and bases; soil stabilization; stresses in pavements; design of flexible and rigid pavements; cost analysis and pavement selection; and pavement evaluation and rehabilitation. Prerequisite: 320 and 330.

440-3 Statically Indeterminate Structures. Analysis of trusses, beams, and frames. Approximate methods. Method of consistent deformations. Three-moment theorem. Slope deflection. Moment distribution. Column analogy. Plastic analysis. Matrix methods. Prerequisite: 340.

441-3 Matrix Methods of Structural Analysis. Flexibility method and stiffness method applied to framed structures. Introduction to finite elements. Prerequisite: 340.

442-3 Structural Steel Design. An introduction to structural steel design with emphasis on buildings. Design of structural members and typical welded and bolted connections in accordance with the specifications of the Steel Construction Manual of Steel Construction (AISC). Design project and report required. Prerequisite: 340.

444-3 Reinforced Concrete Design. Behavior and strength design of reinforced concrete beams, slabs, compression members and footings. Prerequisite: 340.

445-3 Fundamental Theory of Earthquake Engineering. The nature and mechanics of earthquakes. Plate tectonics, types of faulting, recording and measuring ground motion. Analysis of free and forced vibration of a single degree of freedom system. Steady state and transient response. Impulse response function. Dynamic amplification and resonance. Response to ground motion. Response spectrum analysis. Prerequisite: CE 340, 320 or consent of instructor.

446-3 Prestressed Concrete Design. Fundamental concepts of analysis and design. Materials. Flexure, shear, and torsions. Deflections. Prestress losses. Composite beams. Indeterminate structures. Slabs. Bridges. Prerequisite: 444.

447-3 Seismic Design of Structures. Basic seismology, earthquake characteristics and effects of earthquakes on structures, vibration and diaphragm theories, seismic provisions of the International Building Code, general structural design and seismic resistant concrete and steel structures. Prerequisite: 442 or 444, concurrent enrollment or consent of instructor.

448-3 Structural Design of Highway Bridges. Structural design of highway bridges in accordance with the specifications of the American Association of State Highway and Transportation Officials (AASHTO); superstructure includes concrete decks, steel girders, prestressed and post-tensioned concrete girders; substructure includes abutments, wingwalls, piers, and footings. Prerequisite: 442 or 444, concurrent enrollment or consent of instructor.

471-3 Groundwater Hydrology. Analysis of groundwater flow and the transport of pollution by subsurface flow; applications to the design of production wells and remediation of polluted areas; finite difference methods for subsurface analyses. Prerequisite: 370 or consent of instructor.

472-3 Open Channel Hydraulics. Open channel flow, energy and momentum, design of channels, gradually varied flow computations, practical problems, spatially varied flow, rapidly varied flow, unsteady flow, flood routing, method of characteristics. Prerequisite: 474 or consent of instructor.

473-3 Hydrologic Analysis and Design. Hydrological cycle, stream-flow analysis, hydrographs generations, frequency analysis, flood routing, watershed analysis, urban hydrology, flood plain analysis. Application of hydrology to the design of small dams, spillways, drainage systems. Prerequisite: 370.

474-3 Hydraulic Engineering Design. Study of pipe flow, network systems, pump selection, open channel flow, uniform flow, critical flow, gradually varied flow, rapidly varied flow, design of transitions, water surface profiles. Prerequisite: 370 and Engineering 351.

500-1 to 4 Seminar. Collective and/or individual study of selected issues and problems relating to various areas of civil engineering. Prerequisite: graduate standing.

510-3 Hazardous Waste Engineering. Analysis of hazardous waste generation, storage, shipping, treatment, and disposal. Source reduction methods. Government regulations. Remedial action. Prerequisite: CE 418 and Engineering 300.

512-3 Environmental Engineering Chemistry. Fundamentals as well as frontiers in aquatic chemistry, environmental organic chemistry, and environmental biochemistry. Topics include thermodynamics and kinetics of redox reactions, linear free energy relations, abiotic organic compound transformations, stoichiometry, energetics and kinetics of microbial reactions, biochemical basis of the transformation of key organic and inorganic pollutants in the environment. Prerequisite: CE 418 or consent of instructor.

516-3 Water Quality Modeling. Water quality factors and control methods. Technical, economic, social and legal aspects concerned with implementation of various engineered systems for water quality management. Case studies. Prerequisite: 418.

517-3 Industrial Waste Treatment. Theories and methods of treating industrial wastes. Case studies of major industrial waste problems and their solutions. Prerequisite: 418.

518-3 Advanced Biological Treatment Processes. The biochemical and microbial aspects of converting substrate to bacterial cell mass or products and its use in various phases of industry (both fermentation and wastewater treatment). Design of activated sludge and trickling filter plants from lab data obtained on explicit wastes from both industry and municipalities. Prerequisite: 418.

520-3 Advanced Soil Mechanics. Advanced theories in soil mechanics, stress distribution in soils, seepage, consolidation, shear strength, settlement analysis and stability of slopes. Prerequisite: 320, 350, 421 or concurrent enrollment.

521-3 Soil Improvement. Methods of soil stabilization, compaction, dynamic compaction, chemical treatment, compaction piling, stone columns, dewatering, soil reinforcement with stirrups, geomembranes and geogrids, ground freezing, stabilization of industrial wastes. Prerequisite: 320, 421.

522-3 Advanced Foundation Engineering. Case histories of foundation failure, bearing capacity theories, shallow foundations, deep foundations, piles under vertical and horizontal loads, pier foundations, foundations for difficult soil conditions, soil improvement. Prerequisite: 421.

523-3 Soil Dynamics. Problems in dynamic loading of soils, dynamic soil properties, liquefaction, dynamic earth pressure, foundations for earthquake and other dynamic loads. Prerequisite: 320 and 421.

524-3 Advanced Soil Testing. Review of basic laboratory tests on soils, hands-on training for performing advanced laboratory tests on soils such as: triaxial compression, flexible wall permeability, one-dimensional consolidation, and California bearing ratio, understanding ASTM standards, sample preparation, data reduction and interpretation, and development of detailed laboratory test reports. Prerequisites: CE 421, or consent of instructor.

525-3 Foundations for Dynamic Loads. Dynamic loads due to natural and man-made phenomena, damage to humans and the environment, property loss, analytical models for response analysis of foundation-soil systems for steady state, seismic and impact loads, design criteria, determination of soil properties, stiffness and damping of foundation-soil systems, design of shallow and deep foundations for various types of dynamic loads, computer applications, case histories of damage. Prerequisites: CE 421 and CE 445 or consent of instructor.

530-3 Advances in Materials and Testing. An introduction to advances in concrete technology; High strength concrete; Light-weight concrete; Cement and polymer composites; and Non-destructive testing. Fundamental concepts, manufacture, performance, testing, design methodology and applications.

540-3 Structural Dynamics. Analysis of the dynamic response of multidegree-of-freedom framed structures. Structural idealizations. Matrix formulation. Lagrange's equations. Response calculation by mode-superposition and direct integration methods. Analysis for earthquakes. Prerequisite: 340 or consent of instructor.

542-3 Nonlinear Structural Analysis. Analysis of the nonlinear response of framed structures subjected to static and dynamic loads. Structural idealizations. Response calculation by incremental and iterative techniques. Instability phenomena of snap-through and bifurcation. Post-buckling behavior. Approximate formulations. Detection of instability under dynamic loads. Prerequisite: 441 or 551 or consent of instructor.

544-3 Advanced Design of Reinforced Concrete. Deep beams, shear friction. Slab, beam, girder systems. Monolithic joints. Retaining walls. Deflections. Length effects on columns. Two-way floor systems. Yield line theory. Torsion. Seismic design. Prerequisite: 444.

545-3 Advanced Steel Design. Economical use of high strength steel; behavior and design bolted and welded building connections, plate girders and composite steel-concrete beams; brittle fracture and fatigue; and low-rise and industrial-type buildings. Prerequisite: 442.

551-3 Finite Element Analysis. (Same as Mechanical Engineering 565). Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Prerequisite: Civil Engineering 350 and Mathematics 305.

552-3 Theory of Elasticity. Stress and strain equations of elasticity; equilibrium equations; compatibility equations; stress functions; applications of elasticity in solving engineering problems in two and three dimensions. Prerequisite: 350 and Mathematics 305.

553-3 Theory of Plasticity. (Same as Mechanical Engineering 513) Criteria for onset of yielding, isotropic and kinematic strain hardening; flow rules for plastic strains; elastic plastic bending and torsion, slip line field theory; plane stress problems; limit analysis. Prerequisite: 350 and Mathematics 305 or consent of instructor.

554-3 Experimental Mechanics. An introduction of various experimental techniques that are commonly used to determine properties such as deformation, straining, surface contour, etc. The topics to be covered include the principles of strain gage technology, theory of photoelasticity, piezoelectric accelerometer, laser based interferometry, image processing and analysis, and reverse mechanics. The specific areas of practical application for each type of experimentation will be discussed. Prerequisite: 350.

556-3 Theory of Laminate Composite Structures. Orthotropic and Anisotropic Materials, Laminated Plate Theory, Ritz Method, Galerkin's Method, bending, buckling

and vibration of laminated structures. Prerequisite: 350 and Mathematics 215.

557-3 Advanced Mechanics of Materials. (Same as Mechanical Engineering 566). Advanced topics in mechanics of materials including: elasticity equations; torsion of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentration. Prerequisite: 350 and Engineering 222.

570-3 Sedimentation Engineering. Introduction to the transport of granular sediment by moving fluids; analysis of regional degradation, aggradation and local scour in alluvial channels; investigation of sediment sources, yield and control. Prerequisite: 474 or consent of instructor.

571-3 Water Resources Systems Engineering and Management. Philosophy of water resources planning; economic, social and engineering interactions related to water quantity; quantitative optimal planning methodologies for the design and operation of hydrosystems; guest lecturers; projects/case studies. Prerequisite: 474 or consent of instructor.

572-3 Advanced Hydraulic Design. Design and analysis of stormwater control and conveyance systems, dams, spillways, outlet works, stilling basins, culverts and other complex hydraulic systems. Prerequisite: 474 or consent of instructor.

573-3 Modeling of Hydrosystems. Hydraulic and hydrologic modeling; theory and application of common surface and subsurface flow models such as HEC-RAS, HEC-6, FLDWAV, DAMBRK, MODFLOW and MODPATH. Prerequisite: 474 or consent of instructor.

592-1 to 5 Special Investigations in Civil Engineering. Advanced Civil Engineering Topics and/or problems in (a) Structural Engineering, (b) Hydraulic Engineering, (c) Environmental Engineering, (d) Geotechnical Engineering, (e) Fluid Flow Analysis, (f) Computational Mechanics, (g) Composite Materials, and (h) Stress Analysis. Prerequisite: graduate standing and consent of instructor.

593-3 Civil Engineering Project. Advanced project on topics such as case studies, engineering design, testing and analysis methods, computer modeling. Or any other topic focusing on engineering practice. Detailed project report is required. Prerequisite: graduate standing and consent of instructor.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

COMMUNICATION DISORDERS AND SCIENCES

(See Rehabilitation Institute for program description.)

COMPUTER SCIENCE

www.cs.siu.edu/
csinfo@cs.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Akkaya, Kemal, Assistant Professor, Ph.D., University of Maryland, Baltimore County, 2005; 2005. Wireless sensor and actuator networks, ad-hoc networking, spatio temporal and geosensor databases.

Carver, Norman F., III, Associate Professor, Ph.D., University of Massachusetts, 1990; 1995. Multi-agent systems, sensor interpretation, knowledge-intensive control of AI systems.

Che, Dunren, Associate Professor, Ph.D., Beijing University of Aeronautics and Astronautics, Beijing China, 1994; 2001. Database, structured document management, bioinformatics.

Cheng, Qiang, Assistant Professor, Ph.D. University of Illinois, 2002. Multimedia computing and security, biomedical image and information processing.

Danhof, K. J., Professor, *Emeritus*, Ph.D., Purdue University, 1969; 1969.

Gupta, Bidyut, Professor, Ph.D., University of Calcutta, 1986; 1988. Distributed systems, fault-tolerant computing, mobile communication.

Hexmoor, Henry, Assistant Professor, Ph.D., University of Buffalo, 1996; 2006. Artificial intelligence, Multi-agent systems, cognitive science, mobile robotics, knowledge representation and reasoning.

Hou, Wen-Chi, Professor, Ph.D., Case Western Reserve University, 1989; 1989. Statistical databases, query optimization, data stream processing, spatial data structures.

The Department of Computer Science offers a graduate program leading to the Master of Science and Doctor of Philosophy degree in computer science. For admission procedures to these degree programs refer to the Graduate School or department website (www.cs.siu.edu).

A nonrefundable \$50.00 application fee must be submitted with the Graduate School's online application for Admissions to Graduate Study in Computer Science. Applicants may pay this fee by credit card if applying electronically or must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank, sent along with their supporting documentation.

Decisions concerning the admission of students to and retention of students in the graduate program will be made by the department faculty subject to the requirements of the Graduate School.

Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947; 1950.

McGlinn, Robert J., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1976; 1981.

Mogharreban, Namdar, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1989; 1999. End user computing, computer training, computing in special populations, decision making, decision science.

Phillips, Nicholas C.K., Associate Professor, *Emeritus*, Ph.D., University of Natal, 1967; 1988.

Rahimi, Shahram, Associate Professor, Ph.D., University of Southern Mississippi, 2002; 2002. Distributed computing, software agents, expert systems, fuzzy logic, soft computing.

Wainer, Michael S., Associate Professor, Ph.D., University of Alabama at Birmingham, 1987; 1988. Computer graphics, agile software development and testing, HCI.

Wright, W. E., Professor, *Emeritus*, D.Sc., Washington University, 1972; 1970.

Zargham, M. R., Professor and *Chair*, Ph.D., Michigan State University, 1983; 1983. Computer architecture, fuzzy logic, neural networks, parallel processing, expert systems.

Zhu, Mengxia, Assistant Professor, Ph.D., Louisiana State University, 2005; 2006. Remote visualization system, distributed high-performance computing, bioinformatics, distributed sensor networks.

Master of Science Degree in Computer Science

Admission. The evaluation of applicants for admission is based primarily on the student's academic record with particular attention being given to past performance in relevant undergraduate course work. Applicants are expected to have a substantial background in undergraduate computer science courses covering high level and assembly language programming, data structures, computer organization, logic design as well as discrete mathematics, calculus, and linear algebra. The applicant is expected to have completed course work in the above subject areas prior to admission. Normally, a GPA of at least 3.0/4.0 is required by the Department of Computer Science.

Requirements. A student who has been admitted to the graduate program in Computer Science can meet the requirements for the Master of Science degree by completing 30 hours of graduate credit subject to the following constraints:

1. Each of the courses CS 401, CS 420, and CS 455 must be taken. (If a specific course, or its equivalent, is already part of the student's academic background, an alternate course will be substituted, with Graduate Program Director approval.)
2. The 30 hours of graduate work must include at least four 500-level CS lecture courses.
3. A student can take a maximum of 6 hours, subject to the approval of the department, either 400 or 500-level courses from other academic units in the university.
4. Students are required to choose either a thesis or non-thesis program:

Thesis Option

A student must complete 6 credit hours of CS 599 Thesis, in 3 credit hour segments taken for two semesters and 24 credit hours of lecture courses. The student is eligible to take the course CS 598 (must be in industry only). This CS 598 course will be considered equivalent to 3 credit hours of thesis (subject to the approval of the supervising faculty).

Non-Thesis Option

A student must take 27 credit hours of lecture courses. In addition, the student will take CS 598 Graduate Project under the supervision of a faculty member.

Doctor of Philosophy Degree in Computer Science

Admission. Subject to meeting the admission requirements of the Graduate School, admission requirements for the Ph.D. in computer science consist of:

1. A master's degree in computer science or a related field with a minimum GPA of 3.25/4.0.
2. Graduate Record Examination (GRE) general test scores. It is recommended that results from the GRE subject area in computer science or a related area be included.
3. In exceptional cases, high achieving students with only bachelor degrees will be admitted to the program. Each student, in addition to the Ph.D. program course requirements, must complete at least 15 semester hours of approved computer science courses including CS 401, CS 420, CS 455, and two 500-level lecture courses, with a minimum accumulated GPA of 3.25/4.0 in those courses. If a specific course, or its equivalent, is already part of the student's academic background, an alternate course will be submitted.

Each applicant is reviewed and evaluated on an individual basis. The evaluation of applicants for admission is based primarily on the student's academic record and area of research interest. Application materials should include evidence of scholarly ability and/or achievement (e.g. awards, scholarships, work experience, recommendation letters, and published research papers). Only those who best meet the research goals and objectives of the doctoral program will be selected for admission.

Requirements. The student must fulfill the requirements for the departmental Qualifying Examination within three years of enrollment in the doctoral program. The Qualifying Examination is organized and administered by the student's academic advisor. The faculty prepares a written test based on at least two areas of concentration related to the student's intended dissertation area. Questions will be drawn from regularly scheduled 400 and 500-level graduate courses at SIUC. The grade for the exam will be on a Pass or Fail basis for each subject area. If a student fails to pass any subject area of the written examination, a second chance is given for the failed topic test. Students who fail the Qualifying Examination after two attempts will be dismissed from the Ph.D. program.

To fulfill the course requirements of the Ph.D. program, the student must complete at least 24 credit hours of 400/500-level courses and 24 credit hours of CS 600 Dissertation research, all of which are subject to the following constraints:

1. The course work must include two one-credit hour seminar courses, six credit hours from an approved list of computer science 400/500-level courses, and six elective credit hours of CS 500-level courses.
2. The student must file a request with the Department to appoint a dissertation committee to supervise the remaining doctoral work. This committee will consist of five graduate faculty members, one or two of whom will be from a graduate program outside the Department, one preferably from outside this university. The student's dissertation advisor will serve as the chair of this committee.
3. Each student should complete a course of study as determined by the student's dissertation committee.
4. The course of study must include a minimum of six credit hours of 400/500-level courses from academic departments other than computer science. These courses must be selected from a list approved by the Department.
5. Having passed the qualifying exams and after completion of most of the course requirements, a student will begin working on a dissertation proposal. The next step will be a Preliminary Examination consisting of an oral test on the student's proposed research topic. The student will pass the Preliminary Examination only if the

members of the committee, with at most one exception, judge the performance of the student's oral examination to be satisfactory. In the event the student's performance is unsatisfactory, the committee will reschedule the exam for a later time. A student who fails the reexamination will be dismissed from the Ph.D. program.

6. A student will be officially admitted to candidacy for the Ph.D. degree after passing the Preliminary Exam and upon completion of all course work. The student must then complete 24 credit hours of dissertation credit, restricted to nine hours per semester. When the research is complete and the dissertation is written, a final oral examination will take place to determine if the research conducted is worthy of the Ph.D. degree. The dissertation must conform to high literary and scholastic standards

and comply with all the relevant requirements of the Graduate School. The dissertation must represent original research of good quality. From the dissertation, the candidates should publish (or have accepted for publication) a minimum of two articles in peer-reviewed publications, at least one of which should be a journal.

7. Each candidate must pass a final oral exam over the candidate's dissertation, conducted by the candidate's dissertation committee. The dissertation will be accepted provided the dissertation advisor and at least three of the other four members of the committee so agree.
8. Degree requirements, graduation, and time limits are subject to the general guidelines of the Graduate School.

Courses (CS)

401-3 Computer Architecture. Review of logical circuit design. Hardware description languages. Algorithms for high-speed addition, multiplication and division. Pipelined arithmetic. Implementation and control issues using PLA's and microprogramming control. Cache and main memory design. Input/Output. Introduction to interconnection networks and multiprocessor organization. Prerequisite: 315 with a grade of C or better.

402-3 Theory and Applications of Computer Aided Design. A study of algorithmic techniques, which solve high complexity design rules. Graph algorithms and formulations, randomized solutions, techniques from operations research and statistics, computational geometry algorithms and data structures are introduced. The techniques are mainly applied on the physical design/automation problem for integrated circuits and systems. Prerequisite: 315 and 355 each with grade of C or better.

404-3 Autonomous Mobile Robots. This course is a comprehensive introduction to modern robotics with an emphasis on autonomous mobile robotics. Fundamentals of sensors and actuators as well as algorithms for top level control are discussed. Multi-robotics and human-robot interaction issues are explored. A group project is an integral part of this course. Prerequisite: 330 with a grade of C or better.

406-3 Basic Linux System Administration. This course will be an introduction to the administration of Linux systems, with emphasis on security for networked systems. Topics to be covered include: installation and configuration of Linux distributions, typical maintenance activities, and security measures for networked systems. Students will have access to lab machines for hands on practice. Prerequisite: 306 with a grade of C or better.

408-3 Applied Cryptography. This course is a comprehensive introduction to modern cryptography, with

an emphasis on the application and implementation of various techniques for achieving message confidentiality, integrity, authentication and non-repudiation. Applications to Internet security and electronic commerce will be discussed. All background mathematics will be covered in the course. Prerequisite: CS 330 with a grade of C or better and MATH 221.

410-3 Computer Security. A broad overview of the principles, mechanisms, and implementations of computer security. Topics include cryptography, access control, software security and malicious code, trusted systems, network security and electronic commerce, audit and monitoring, risk management and disaster recovery, military security and information warfare, physical security, privacy and copyrights, and legal issues. Prerequisite: 306 with a grade of C or better.

412-3 Programming Distributed Applications. This course uses advanced features of the Java programming language to develop networked, distributed, and web-based applications. Topics covered include, but are not limited to, sockets, datagrams, the Java security model, threads, multi-tier architectures, Java RMI, Java database connectivity, and Java-based mobile agents. Prerequisites: CS 306 with a grade of C or better.

416-3 Compiler Construction. Introduction to compiler construction. Design of a simple complete compiler, including lexical analysis, syntactical analysis, type checking and code generation. Prerequisite: 306 and 311 each with a grade of C or better.

420-3 Distributed Systems. A top-down approach addressing the issues to be resolved in the design of distributed systems. Concepts and existing approaches are described using a variety of methods including case studies, abstract models, algorithms and implementation exercises. Prerequisites: CS 335.

430-3 Database Systems. This course concentrates on the relational model and includes several query languages. Topics covered include normalization, database design, catalogs, transaction support, concurrency control, integrity support, backup and recovery, and security. Projects involve the use of both personal and enterprise database systems. Prerequisite: CS 330 with a grade of C or better.

435-3 Software Engineering. Principles, practices, and methodology for development of large software systems. Object-oriented principles, design notations, design patterns and coping with changing requirements in the software process. Experiences with modern development tools and methodologies. A team project is an integral part of this course. Prerequisite: 330 with a grade of C or better; 306 with a grade of C or better recommended.

436-3 Artificial Intelligence I. Search and heuristics, problem reduction. Predicate calculus, automated theorem proving. Knowledge representation. Applications of artificial intelligence. Parallel processing in artificial intelligence. Prerequisite: 311 and 355 each with a grade of C or better.

437-3 Intelligent Systems and Soft Computing. An introduction to the field of computer intelligence and soft computing. It covers rule-based expert systems, fuzzy expert systems, artificial neural networks, evolutionary computation, and hybrid systems. Students will develop rule-based expert systems, design a fuzzy system, explore artificial neural networks, and implement genetic algorithms. Prerequisite: 330 with a grade of C or better.

438-3 Bioinformatics Algorithms. This course is an introductory course on bioinformatics algorithms and the computational ideas that have driven them. The course includes discussions of different techniques that can be used to solve a large number of practical problems in biology. Prerequisite: 330 with a grade of C or better.

440-3 Computer Networks. Design and analysis of computer communication networks. Topics to be covered include queuing systems, data transmission, data link protocols, topological design, routing, flow control, security and privacy and network performance evaluation. Prerequisite: 330 with a grade of C or better; 306 recommended.

441-3 Mobile and Wireless Computing. Concepts of mobile and wireless systems are presented. These concepts include, but are not limited to, Routing and Medium Access for Mobile Ad hoc and Wireless Sensor Networks, Mobile IP, Wireless LAN and IEEE 802.11. Hands-on group lab experience is an integral component in the course. Prerequisite: 330 with a grade of C or better, or consent of the instructor.

447-3 Introduction to Graph Theory. (Same as Mathematics 447.) Introduction to theory of graphs, digraphs, and networks and applications to electrical systems and computer science. Topics include blocks and cutpoints, Eulerian graphs, trees, cycle and cocycle spaces, planarity and Kuratowski's Theorem, connectivity and Menger's Theorem, Hamiltonian graphs, colorability

and Heawood's Theorem, flows in networks and Ford-Fulkerson Theorem, critical path analysis. Prerequisite: Mathematics 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Mathematics 449.) An introduction to combinatorial mathematics with computing applications. Topics include selections and arrangements, generating functions, recursion, inclusion and exclusion, coding theory, block designs. Prerequisite: Mathematics 349 or consent of instructor.

451-3 Theory of Computing. The fundamental concepts of the theory of computation including finite state acceptors, formal grammars, Turing machines and recursive functions. The relationship between grammars and machines with emphasis on regular expressions and context-free languages. Prerequisite: 311 and 355 each with a grade of C or better or graduate standing.

455-3 Advanced Algorithm Design and Analysis. An in-depth treatment of the design, analysis and complexity of algorithms with an emphasis on problem analysis and design techniques. Prerequisite: CS 330 with a grade of C or better or graduate standing.

471-3 Introduction to Optimization Techniques. (Same as Mathematics 471.) Nature of optimization problems. General and special purpose methods of optimization, such as linear programming, classical optimization, separable programming, integer programming and dynamic programming. Prerequisite: 202 and Mathematics 221 and 250.

472-3 Linear Programming. (Same as Mathematics 472.) Nature and purpose of the linear programming model. Development of the simplex method. Application of the model to various problems. Duality theory. Transportation. Assignment problem. Postoptimality analysis. Prerequisite: 202 and Mathematics 221.

475-6 (3, 3) Numerical Analysis. (Same as Mathematics 475.) An introduction to the theory and practice of computation with digital computers. Topics include the solution of nonlinear equations, interpolation and approximation, solution of systems of linear equations, numerical integration, solution of ordinary differential equations, computation of eigenvalues and eigenvectors and solution of partial differential equations. Prerequisite: (a) Mathematics 221 and 250 and Computer Science 202 or equivalent programming proficiency; (b) Mathematics 305 and Computer Science 464a.

484-3 User Interface Design and Development. Problems and processes in the design of highly usable systems. Understanding stakeholders, requirements, tasks, prototyping, evaluation, guidelines and design process and heuristics. Interactive software concepts and implementation considerations. A group project is an integral part of this course. Prerequisite: 306 with a grade of C or better.

485-3 Computer Graphics. Principles and techniques of computer graphics. Interactive graphics software

development using a modern graphics standard. Topics include: primitives, transforms, clipping, modeling, viewing, rendering, texture, animation and ray tracing. A group project is an integral part of this course. Prerequisite: 306 with a grade of C or better; Mathematics 150 and 221 are recommended.

487-3 Software Aspects of Game Development. This course focuses on software implementation and development aspects of game production including: software process, system architecture, frameworks, entity management and interaction design, game design, production and business issues as well as technical foundations in graphics modeling and rendering, collision detection, physics, artificial intelligence, and multiplayer techniques. Prerequisite: 330 with a grade of C or better.

490-1 to 6 (1 to 3 per semester) Readings. Supervised readings in selected subjects. Prerequisite: consent of instructor and department.

491-1 to 6 (1 to 3 per topic) Special Topics. Selected advanced topics from the various fields of computer science. Prerequisite: consent of instructor.

492-1 to 6 (1 to 3 per semester) Special Problems. Individual projects involving independent work. Prerequisite: consent of department.

493-1 to 4 Seminar. Supervised study. Preparation and presentation of reports. Prerequisite: consent of instructor.

498-1 Senior Project in Computer Science I. Selecting and planning a team project which is representative of a project graduates may encounter in their professional employment. This involves team formation, project selection, project planning, proposal writing, and proposal presentation. Prerequisite: Senior status in Computer Science, including completion of or concurrent enrollment in at least two other 400-level Computer Science courses.

499-1 Senior Project in Computer Science II. A continuation of 498. An exercise in the design, implementation, and deployment of a group project culminating in a presentation to the computer science faculty. Prerequisite: 498.

501-3 Advanced Computer Architecture. Hardware and software elements of multiprocessors, multicomputers, pipeline and array machines, data flow architecture and other state-of-the-art architectures. Design principles related to machine structures, interconnection networks, control software and hardware, data storage and access. Prerequisite: 401.

502-3 Design and Analysis of VLSI Systems. This course covers the theory, technology, fabrication and design of digital integrated circuits as they are commonly used in modern digital computers. The topics covered include techniques for solving problems occurring in VLSI and ULSI layouts, built-in self-testing, design for testability and logic synthesis. The course also treats additional selected advanced topics. Prerequisite: 401 and either 402 or consent of instructor.

503-3 Fault-Tolerant Computing Systems. An introduction to different aspects of fault-tolerance in computing systems. Redundancy techniques with an emphasis on information redundancy, software fault-tolerance, coding techniques, algorithm-based fault-tolerance, fault-tolerance interconnection network architecture, DFT techniques, and quantitative evaluation methods. Prerequisite: CS 401.

504-3 Testing of Integrated Circuits and Systems. This course provides a detailed treatment of digital systems testing and testable design. Topics covered include fault modeling, fault simulation, testing for stuck faults, testing for bridging faults, delay faults, IDDQ faults, functional testing, built-in testing, design for testability, logic and system level diagnosis and PLA testing. Prerequisite: 401 and either 402 or consent of instructor.

510- Wireless and Network Security. Advanced security concepts of distributed systems and wireless networks are presented. Topics include IEEE 802.11 security, Wireless Encryption and Authentication, Key Management in Networks, Distributed Denial of Service Attacks, Routing Security, Intrusion Detection and Mobile Code Security. Prerequisite: CS 410 with a grade of C or better or consent of the instructor.

511-3 Formal Specification of Programming Languages. A survey of modeling techniques and Meta languages for the formal specification of the syntax and semantics of high-level programming languages. Prerequisite: 311.

512-3 Declarative Programming. An advanced level course on nonprocedural programming with emphasis on logic programming, pure functional programming, and the characteristics of the declarative style common to these two paradigms. Topics include logic programming, functional programming, implementation consideration for each along with current research topics in the areas. Prerequisite: 311.

514-3 Advanced Operating Systems. Rigorous treatment of advanced topics in operating systems. Multiprocessors and distributed operating systems. Highly concurrent machines. Performance analysis of memory management and scheduling algorithms. Recovery techniques in distributed computation. Security in operating systems. Prerequisite: 335.

516-3 Advanced Compilers. A continuation of 416 including advanced topics in lexical and syntax analysis, error recovery, semantic analysis, code optimization and compiler compilers. Prerequisite: 416.

520-3 Advanced Topics in Parallel & Distributed Computing. An advanced treatment of parallel and distributed computing; review of hardware and software considerations for parallel computation; development and analysis of parallel algorithms (with particular attention to the communication and synchronization costs associated with parallel algorithms); effect of granularity on performance; a comparison of the parallel and distributed

programming paradigms including a detailed study of the central features of each approach; software systems for distributed computing including exposure to one or more distributed programming environments; the direction of parallel computing as suggested by recent, high level parallel languages; parallelizing serial programs; parallelizing compilers; future directions of parallel and distributed computing systems. The course will include a student project. Prerequisite: 420.

530-3 Advanced Data Base System. A detailed treatment of advanced topics in data base systems including, but not limited or restricted to, relational database theory, query optimization, recovery techniques, concurrency control, distributed database systems, security and integrity and database machines. Prerequisite: 430.

532-3 to 6 Topics in Information Systems. A detailed study of two or three topics relevant to information systems. Topics may include but are not limited to sorting, searching, information retrieval and automatic text processing, database security and encryption, distributed databases and data communication. Prerequisite: 430 and consent of instructor.

533-3 Data Mining Techniques and Application. This course will provide the techniques of data mining and knowledge discovery in databases. Fundamental principles and techniques of data mining are explained as well as their potential in Bioinformatics application. Major topic areas are: data preparation, association rule mining, data classification/prediction, data clustering, and web mining. Prerequisite: 430 or consent of instructor.

536-3 Artificial Intelligence II. Theorem proving, the Resolution Principle, strategies, and achievements. Program verification. Natural language processing. Other selected topics. Prerequisite: 436.

537-3 Advanced Topics in Expert Systems. This course is designed to provide students with advanced topics in expert systems theory. Topics covered include: knowledge representation, methods of inference, reasoning under uncertainty, and inexact reasoning (fuzzy logic). A practical introduction to expert systems programming serves to reinforce and clarify the theoretical concepts. Prerequisite: 330 or consent of instructor.

539-Agents and Multiagent Systems. This is an advanced treatment of fundamental concepts in the design of intelligent autonomous agent systems. Classic agent theories, architectures, algorithms, and languages are discussed. An agent-based project is an integral part of this course. Restricted to: Graduate Standing or consent of instructor.

540-3 Advanced Computer Networks. Topics include routing protocols used in internet; data compression techniques; telecommunication systems – its services, architecture and protocols; high speed networks; routing protocols in mobile ad-hoc networks; and a detailed performance analysis of different window flow control and congestion control mechanisms using queuing theory.

Prerequisite: 440 with a grade of *C* or better, or consent of the instructor.

553-3 Formal Languages and Automata. The Chomsky hierarchy of formal grammars and the corresponding classes of automata. Turing machines and basic concepts of computability. Recursive and recursively enumerable languages. Closure properties. Undecidable problems about Turing machines and context-free languages. Deterministic context-free languages and the construction of LR parsers. Prerequisite: 451.

555-3 Computability and Complexity. Turing machines and other models of computation. Computable functions. Church's thesis. Solvable and unsolvable problems. Introduction to complexity theory including the classes P and NP. Polynomial time approximation algorithms for NP-complete problems. Prerequisite: 451.

570-3 to 9 per topic (3,3,3) Topics in Operations Research. (Same as Mathematics 570.) (a) Netflows. Builds on network and generalized network models for the transportation, transshipment, assignment, shortest path, and maximal flow. Prerequisite: 472 or Mathematics 472. (b) Advanced computer simulation. Review of GPSS. Advanced topics in GPSS. Generation of random variates. Validation, parametric, and nonparametric tests. Design of experiments, optimization, parameter tuning. Analysis of variance, spectral analysis, and variance reduction. Prerequisite: 470 and Mathematics 480 or 483. (c) Large scale linear programming. Advanced L.P. techniques for sparse matrices and reinversion routines. Prerequisite: 472 or Mathematics 472. (d) Nonlinear programming. Integer programming with branch and bound and cutting plane methods for solving integer-programming problems. Basic dynamic programming with emphasis on the methods and applications. Prerequisite: 472 or Mathematics 472.

572-1 to 12 Advanced Topics in Numerical Analysis (same as MATH 572). Selected advanced topics in numerical analysis chosen from such areas as: approximation theory; spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Prerequisite: consent of instructor.

585-3 Advanced Topics in Computer Graphics. Study of computer graphics for realistic image synthesis. Object modeling and associated data structures. Advanced rendering techniques such as raytracing and radiosity. Efficiency considerations. Image composition and compression. Current advances and research problems in realistic computer graphics. Prerequisite: 485.

586-3 Pattern Recognition and Image Processing. An introduction to the area of computer vision for the purpose of restoration, segmentation, encoding, analysis and recognition of pictures. Topics include: image transforms, edge detection, smoothing, filtering, pseudo-coloring, syntactic methods in scene analysis, parametric decision

theory, non-parametric decision theory, linear discriminant functions, parameter estimation, supervised learning and unsupervised learning. Prerequisite: 220 and Mathematics 380 or consent of instructor.

590-1 to 9 Readings. Supervised readings in selected subjects. Graded *S/U* only. Prerequisite: consent of instructor and department.

591-1 to 9 (1 to 3 per topic) Special Topics. Selected advanced topics from the various fields of computer science.

593-1 to 4 Seminar. Preparation and presentation of reports. Graded *S/U* only. Prerequisite: consent of instructor.

598-3 Graduate Project. A practical exercise in the design, implementation, documentation and deployment of a project. This project can be done through internship, work/study, or a supervised project.

599-1 to 5 Thesis. Minimum of three hours to be counted toward a master's degree. Prerequisite: consent of department.

600- 1 to 24 Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by the student's academic advisor. Graded *S/U* only. Prerequisite: Admission to Ph.D. in computer science program.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

CREATIVE WRITING

(See English for program description.)

CRIMINOLOGY AND CRIMINAL JUSTICE

<http://ccj.siuc.edu/index.htm>

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Anderson, Dennis B., Associate Professor, *Emeritus*, Ed.D., University of Nebraska, 1970; 1970.

Brunson, Rodney K., Associate Professor, Ph.D., University of Illinois-Chicago, 2003; 2008. Class, gender, race and juvenile/criminal justice, communities and crime, violence, policing, qualitative research methods, criminological theory, delinquency, gangs and female gang involvement.

Burruss, Jr, George W., Assistant Professor, Ph.D., University of Missouri-St. Louis, 2001; 2004. Juvenile courts; legal representation of juveniles; drug courts; decision making in criminal justice organizations; policing.

Corsaro, Nicholas, Assistant Professor, Ph.D. Michigan State University, 2007; 2008. Theories of violent crime, homicide, environmental criminology, public policy, evaluation research, and quantitative statistical analysis.

Coughlin, Joseph S., Professor, *Emeritus*, M.S.W., A.C.S.W., University of Wisconsin, 1954; 1973.

Ferdinand, Theodore N., Professor, *Emeritus*, Ph.D., University of Michigan, 1961; 1985.

Garofalo, James, Professor, *Emeritus*, Ph.D., State University of New York, Albany, 1978; 1992.

Giblin, Matthew J., Assistant Professor, Ph.D., Indiana University, 2004; 2005. Policing, organizational theory, criminological theory.

Hillyard, Daniel, Associate Professor, J.D., Ph.D., University of California, Irvine, 1999; 2002. Law and social change, law and social control, law and morality.

Kempf-Leonard, Kimberly, Professor and *Chair*, Ph.D., University of Pennsylvania, 1986; 2007. Criminal justice & juvenile justice policy; delinquency & criminal careers, research design, race, ethnicity, gender & crime, justice.

Kochel, Tammy, Assistant Professor, Ph.D., George Mason University, 2009; 2009. Policing, legitimacy, crime, prevention, neighborhood ecology and collective efficacy.

Kroner, Daryl G., Assistant Professor, Ph.D., Carleton University, 1999; 2008. Offender assessment, Violent and criminal risk, correctional intervention, mentally ill offenders, criminal desistance.

LeBeau, James L., Professor, Ph.D., Michigan State University, 1978; 1985. crime analysis, CPTED, environmental criminology, GIS, mapping, statistics, policing, and the geography of crime and criminal justice.

Lorinskas, Robert, Associate Professor, *Emeritus*, Ph.D., University of Georgia, 1973; 1980.

McDermott, M. Joan, Associate Professor, *Emeritus*, Ph.D., State University of New York, Albany, 1979; 1992.

Morris, Nancy, Assistant Professor, Ph.D., University of Maryland, 2007; 2007. Juvenile Delinquency, life course criminology, cross-national homicide victimization, longitudinal quantitative methodology, theories of criminal offending and crime.

Mullins, Christopher W., Assistant Professor, Ph.D., University of Missouri-St. Louis, 2004; 2008. Gender and crime, masculinities, criminological theory, violations, or international criminal law, international criminal courts.

Riedel, Marc P., Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1972; 1978.

Robinson, Cyril D., Professor, *Emeritus*, LL.B., Northwestern University, 1952; 1979.

Schafer, Joseph A., Associate Professor, Ph.D., Michigan State University, 2000; 2000. Policing, future of crime and justice, management and administration, policy and program evaluation, police leadership and organizational change.

The Department of Criminology and Criminal Justice, which enjoys a national and an international reputation for quality research and education, offers the Master of Arts degree in Criminology and Criminal Justice. The mission of the M.A. program in Criminology and Criminal Justice is to provide high quality graduate education in criminology and criminal justice. The program focuses on analyzing criminal justice, social justice, and crime prevention problems and solutions. The program prepares its graduates with the analytic capabilities and problem-solving skills that enable them to succeed in professional careers in criminal justice and related agencies, in policy analysis and research, or in continued graduate or professional education. The focus of

the curriculum is theoretically driven, empirically-based criminal justice and crime prevention that takes a problem-solving approach.

Augmenting the academic program, there are opportunities for graduate students to work with faculty members who are conducting research. In addition, students may take Supervised Field Experience credit to blend practical experience with classroom education.

For students who complete the M.A. degree in Criminology and Criminal Justice who wish to pursue a Ph.D., opportunities are available through a cooperative arrangement between the Department of Criminology and Criminal Justice and the Department of Sociology.

Admission

Full admission to the graduate program requires a grade point average of at least 2.70 or better ($A = 4.00$) on approximately the last 60 hours of undergraduate coursework and acceptance by the faculty. Scores on the Graduate Record Examination (aptitude portion only) are also required. The Test of Written English will be required as a component of the regular TOEFL exam.

Students who do not have an undergraduate degree in administration of justice or criminal justice should have a minimum of 12 units in sociology, psychology, political science, or other social sciences. In cases where these criteria are lacking, additional selected undergraduate courses may be required for acceptance in this program.

Requirements

Thesis Option

A total of 32 semester hours are required for the thesis track of the Master of Arts degree in Criminology and Criminal Justice. A thesis is required. Students may take a total of 6 theses semester hours (CCJ 599-1 to 6); however, only 3 hours are counted towards the degree requirements. An oral defense of the student's thesis is required.

Non Thesis Option

A total of 35 credit hours are required for the Non-Thesis Master of Arts degree in Criminology and Criminal Justice. A research paper that exceeds the expectations in terms of rigor and quality for the graduate level term paper and another research paper, poster, or problem analysis project are required.

Courses (CCJ)

The following courses are offered through the Department of Criminology and Criminal Justice.

411-3 Assessment of Offenders. Assessment examines the theories, application, and research relevant to the identification, evaluation, and treatment planning for offenders under supervision by probation, parole, prison, and other community-based correctional organizations. The course also reviews the evidence of effectiveness associated with classification and assessment tools. Prerequisites: CCJ 201, 290 and 316 or consent of instructor.

415-3 Prevention of Crime and Delinquency. Multidisciplinary analysis of the functions, goals and effectiveness of measures to forestall delinquency and crime. Etiology of delinquent behaviors as related to community institutions such as police, courts, corrections, mental health clinics, schools, churches and citizen groups. Prerequisite: CCJ 201, 290 and 316 or consent of instructor.

418-3 Criminal Violence. Examination of historical, comparative, cultural and social structural aspects of homicide, robbery, rape and assaults. Course focuses on trends and patterns in criminal violence, the role of firearms, victim/offender relationships and post-arrest processing of the

Required Core Courses

All candidates for the Master of Arts degree in Criminology and Criminal Justice are required to complete four core courses.

CCJ 500-3 Foundations of Criminal Justice

CCJ 504-3 Criminological Theory

CCJ 510a-4 Research Methods in Criminal Justice: Methods and Concepts

CCJ 510b-4 Research Methods in Criminal Justice: Data Analysis and Interpretation

Application and Further Information

Application forms for both the Graduate School and the Department of Criminology and Criminal Justice must be submitted separately. Upon request to the department, application forms from the the department will be sent. Acceptance in the program is contingent on the final approval of the Criminology and Criminal Justice graduate affairs committee after admission to the Graduate School.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Criminology and Criminal Justice. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

A more detailed description of the graduate program, as well as information about graduate assistantships and fellowships, may be obtained by writing: Graduate Secretary, Department of Criminology and Criminal Justice, Southern Illinois University Carbondale, Carbondale, IL 62901-4504.

offender in the criminal justice system. Prerequisite: CCJ 201, 290 and 316 or consent of instructor.

460-3 Women, Crime, and Justice. (Same as Sociology 461 and Women's Studies 476.) Addresses the topics of women as offenders, as victims, and as workers in the criminal justice system.

461-3 White-Collar Crime. Examines the physical and financial harm caused by wayward corporations and business employees from both theoretical and empirical perspectives. Emphasis is placed on ethics, theory, legal decision-making and the regulatory monitoring and control of illegal corporate activity.

462-3 Victims of Crime. (Same as Sociology 462) Examines the intent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement and alternative ways of defining and responding to victimization. Prerequisite: CCJ 201, 290, 316 or consent of the instructor.

468-3 Law and the Social Control of Women in American History. (Same as History 468 and Women's Studies 468) An examination of the ways in which the law affects the behavior, life chances, identities and experiences of women, from colonial times to the present. Team taught by faculty from History and Criminology and Criminal Justice.

473-3 Juvenile Delinquency. (Same as Sociology 473.) Nature of theories; delinquency; analytical skills in studying in the delinquent offenders' systematic assessment of efforts at prevention, control, and rehabilitation in light of theoretical perspectives. Prerequisite: CCJJ 201, 290 and 316 or consent of instructor.

480-3 Effective Correctional Practices. Exploration and evaluation of correctional intervention strategies developed for sentencing of adjudicated persons. Particular emphasis on examining empirical research literature on effective correctional practices, including programs currently implemented in institutional setting, alternatives to institutional corrections, and community based programs. Prerequisites: 201, 290, 316, and 384, or consent of instructor.

490-1 to 3 Independent Study in Criminology and Criminal Justice. Supervised readings or independent research projects in various aspects of crime control, treatment of offenders, and the management of criminal justice programs and agencies. The student must submit a statement describing the readings/research topic to the faculty member sponsoring the student's independent study. May re-enroll for a maximum of 6 credits. (Maximum 3 semester hours per term) Prerequisite: CCJ 201, 290 and 316 and consent of instructor.

492-3 Contemporary Issues in Criminology and Criminal Justice. A forum, geared toward seniors, majoring in Criminology and Criminal Justice, that focuses on criminal justice issues of concern to students and faculty. May re-enroll for a maximum of 6 credits. (Maximum 3 semester hours per term) Satisfies CoLA Writing-Across-the-Curriculum requirement. Prerequisite: CCJ 201, 290 and 316 and consent of instructor. (Past topics include: Children and the Law, The Death Penalty, Federal Criminal Justice Policy, Myth-busting in Criminology and Criminal Justice, Geographic Profiling, Criminal Investigation of Assassination and Terrorism, and Family Violence.)

500-3 Foundations of Criminal Justice. An exploration of the nature and scope of the criminal justice process. Criminal justice operations and behavior are assessed in context of the major theoretical, historical, normative and organizational influences found in the field.

504-3 Criminological Theory. Multidisciplinary study of biogenic, psychogenic and sociogenic explanations for criminal behavior relevant to policy-making and practice in criminal justice. Restricted to: consent of instructor.

505-3 The Nature of Crime. This course examines the extent, distribution, and correlates of criminal offending and patterns of crime. It emphasizes the review and application of recent empirical research to the development of

theories on crime causation, as well as public policy and crime prevention programs.

510A, B(4,4) Research in Criminology and Criminal Justice. A two course sequence integrating research methods and data analysis in criminal justice and criminology. (a) Methods and Concepts. Principles and methods of scientific inquiry are examined. Special emphasis is applied to research design and data collection issues. (b) Data Analysis and Interpretation. Data management, univariate, bivariate and multivariate analyses, and specialized concerns with criminal justice data are emphasized. In this sequence, lab exercises including hands-on experience in the conduct of criminal justice research are featured. Prerequisite: 510a is a prerequisite for 510b.

517-3 to 6 Advanced Topics in Quantitative Research. This course provides detailed coverage of quantitative analytic procedures used in criminology and criminal justice. Specific topics covered will vary (students should consult instructor). Sample topics: advanced ordinary least squares, time series analysis, structural equation modeling, and analysis of limited dependent variables/ Proir knowledge of correlation and regression is essential. Prerequisite: 510a and b.

518-3 Qualitative Research Methods. This course introduces students to the various types of qualitative research methods (interviewing, ethnography, in situ observation, case studies). It provides students with an epistemological foundation for understanding the nature and purpose of these approaches as well as opportunities for practicing these techniques. Prerequisite: 510a and b.

519-1 to 6 Independent Study. Readings or independent research supervised by a faculty member in a selected area of criminal justice or criminology. May be repeated up to a maximum of six credits. Restricted to: consent of a faculty sponsor.

540-3 Seminar in Theory and Practice of Crime Prevention. Recent crime prevention initiatives are examined, with emphasis on the following issues: historical development of the initiatives, their grounding in theories of crime and human behavior, their effectiveness, their unintended consequences, and the values they serve. Restricted to: consent of instructor.

550-3 Seminar in Juvenile Justice and Delinquency. An exploration of contemporary problems and policy issues in juvenile justice and juvenile delinquency. Restricted to: consent of instructor.

562-3 Law and Social Control. Examines major perspectives on the law as an instrument of social control and social change. Includes an exploration of theories of jurisprudence, the balance between government powers and individual rights, and fundamental legal concepts in criminal law, such as due process, equal protection, and cruel and unusual punishment.

571-3 Seminar in Punishment and Corrections. Examines the theory and philosophy of punishment and the prac

tice of corrections in the United States. Attention is given to the implications of competing penal philosophies, their viability and application in the correctional system. Restricted to: consent of instructor.

576-3 Policy Analysis in Criminology and Criminal Justice. Examination of the public policy process in criminal justice, and of the role of policy analysis in the development, planning and implementation of new and revised policies and programs.

584-3 Administration and Management in Criminal Justice. Focuses on the development and history of administrative theory and its impact on management techniques involving administration of justice bureaucracies.

587-3 Seminar in Policing. Multidisciplinary study of the philosophical premises, theoretical implications and functions of contemporary policing. Restricted to: consent of instructor.

592-3 to 6 (3,3) Advanced Seminar in Criminology and Criminal Justice. Seminars of varied content for advanced students. May be repeated with different topics up to a maximum of six credits. Restricted to: consent of instructor.

595-1 to 6 Supervised Field Experience. Experience in law enforcement agencies, juvenile courts, probation and parole departments, correctional institutions, delinquency control programs and public or voluntary agencies. Orientation sessions precede placement. Student must submit internship application during the first thirty days of the preceding spring or fall semester. Graded *S/U* only. Restricted to: consent of instructor.

599-1 to 6 Thesis. Graded *S/U* only. Restricted to: consent of academic coordinator.

601-1 (per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

CURRICULUM AND INSTRUCTION

www.ci.siu.edu/currinst@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Aikman, Arthur L., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1965; 1964.
 Barrette, Pierre P., Associate Professor, *Emeritus*, Ed.D., University of Massachusetts, 1971; 1978.
 Bauner, Ruth E., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1978; 1956.
 Becker, Jerry P., Professor, Ph.D., Stanford University, 1967; 1979.
 Bedient, Douglas, Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1971; 1969.
 Boykin, Arsene O., Associate Professor, *Emeritus*, Ed.D., University of Illinois, 1964; 1972.
 Bu, Lingguo, Assistant Professor, Ph.D., Florida State University, 2008; 2008.
 Campbell, James A., Associate Professor, *Emeritus*, Ph.D., Ohio State University, 1978; 1989.
 Copenhaver, Ron, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1979; 1978.
 Coscarelli, William, Professor, Ph.D., *Emeritus* Indiana University, 1977; 1986.
 Dale, Doris C., Professor, *Emerita*, D.L.S., Columbia University, 1968; 1969.
 Dixon, Billy G., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1967; 1961.
 Eddleman, E. Jacqueline, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1970; 1969.
 Erickson, Lawrence, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1972; 1984.
 Fadde, Peter, Associate Professor, Ph.D., Purdue University, 2002; 2003.
 Gilbert, Sharon L., Associate Professor, *Emerita* Ph.D., Ohio State University, 1988; 1988.
 Glassett, Kelly F., Assistant Professor, Ph.D., University of Utah, 2007; 2007.
 Hungerford, Harold R., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1965.
 Jackson, James, Associate Professor, *Emeritus* Ph.D., University of Wisconsin, 1976; 1976.
 Jackson, Michael, Professor, *Emeritus*, Ed.D., University of Florida, 1971; 1971.
 Jones, Dan R., Associate Professor, *Emeritus*, Ed.D., Indiana University, 1978; 1978.
 Karmos, Ann, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1975; 1975.
 Killian, Joyce, Professor, Ph.D., Pennsylvania State University, 1980; 1981.
 Lamb, Morris L., Associate Professor, *Emeritus*, Ed.D., University of Oklahoma, 1970; 1970.
 Lin, Cheng-Yao, Assistant Professor, Ph.D., University of Illinois at Urbana-Champaign, 2003; 2004.
 Loh, Christian Sebastian, Associate Professor, Ph.D., University of Georgia, 2004; 2004.

Mallette, Marla H., Associate Professor, Ph.D., University of Nevada, Las Vegas, 1999; 2007.
 Malone, Willis E., Professor, *Emeritus*, Ph.D., Ohio State University, 1950; 1939.
 Matthias, Margaret, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1972; 1969.
 McIntyre, Christina C., Assistant Professor, Ph.D., Georgia State University, 2007; 2008.
 McIntyre, D. John, Professor, E.D., Syracuse University, 1977; 1977.
 Miller, Grant R., Assistant Professor, Ph.D., Boston College, 2007; 2007.
 Mogharreban, Catherine N., Associate Professor, Ph.D., Southern Illinois University, 1990; 1998.
 Moore, Eryn E., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1976; 1968.
 Mumba, Frackson, Associate Professor, Ed.D., Illinois State University, 2005; 2005.
 Nelson, Joann N., Assistant Professor, *Emerita*, Ph.D., University of Illinois, 1980; 1982.
 Norris, William, Associate Professor, *Emeritus*, Ed.D., Indiana University, 1973; 1977.
 Pearlman, Susan F., Associate Professor, Ph.D., University of Missouri-Columbia, 1987; 1989.
 Perez, Michelle Salazar, Assistant Professor, Ph.D., Arizona State University, 2009; 2009.
 Post, Donna M., Associate Professor, Ph.D., Pennsylvania State University, 1990; 1990.
 Pultorak, Edward G., Associate Professor, Ph.D., Indiana University, 1988; 1988.
 Seltzer-Kelly, Deborah L., Assistant Professor, Ph.D., University of Nevada, Reno, 2006; 2008.
 Shelby-Caffey, Crystal V., Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2008; 2009.
 Shepherd, Terry R., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971; 1971.
 Shrock, Sharon A., Professor, Ph.D., Indiana University, 1978; 1984.
 Smith, Lynn C., Associate Professor and *Chair*, Ph.D., University of Georgia, 1984; 1984.
 Solliday, Michael, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1975; 1967.
 Teitelbaum, Kenneth, Professor and *Dean of College of Education and Human Services*, Ph.D., University of Wisconsin, Madison, 1985; 2007.
 Thompson, Stacy D., Associate Professor, Ph.D., Iowa State University, 1998; 2005.
 Volk, Gertrude, Professor, *Emerita*, Ph.D., Southern Illinois University, 1983; 1987.
 Waggoner, Jan E., Associate Professor and Director of Teacher Education for College of Education and Human Services, Ed.D., Memphis State University, 1990; 1990.
 Wise, Kevin C., Professor, Ed.D., University of Georgia, 1983; 1986.

The Department of Curriculum and Instruction offers three graduate degree programs: the Master of Science in Education (M.S.), The Master of Arts in Teaching (M.A.T.), and the Doctor of Philosophy in Education (Ph.D.). Those pursuing the M.S. or Ph.D. must select a specialty area in curriculum and instruction Ph.D. only, early childhood, elementary education, instructional development, instructional technology, middle level education, mathematics education, reading and language studies, science education, social science education, or teacher leadership. Candidates for the M.A.T. must select the secondary education specialty area and an area of concentration. Upon graduation from the program, M.A.T. students are eligible for *only* certification to teach in grades 9-12. Those who already possess a bachelor's degree in education are ineligible for the M.A.T. program.]

The Department also offers State of Illinois endorsements as middle level educators (grades 6-9), reading teachers, or K-12 reading specialists. Endorsement opportunities are available to M.S. and Ph.D. candidates as part of their specialty area preparation; M.A. T. candidates earn the middle level endorsement after completion of requirements for the degree. Endorsements in specific secondary level courses (e.g., chemistry, physics, and psychology) are also available. All such endorsements are arranged through the state and may require additional course work as well as a state-level transcript analysis.

Admission. Applicants for graduate programs must submit admission forms for both the Graduate School and the Department of Curriculum and Instruction. General requirements for admission to graduate programs are described in Chapter 1 of this catalog; additional requirements for the M.A.T. program are explained in the section that follows. In all cases, a selection and review committee screens applicants on the basis of prior undergraduate and graduate work, grade point average, as well as standardized test scores, work experience, and letters of recommendation as needed. The committee may recommend admission for candidates with specific academic deficiencies if, in its opinion, a candidate's application materials demonstrate unusual professional promise.

Application materials may be obtained by addressing a request to: Coordinator of Graduate Studies, Department of Curriculum and Instruction, Mail Code 4610, Southern Illinois University, 625 Wham Drive, Carbondale, IL 62901. Specific information may be obtained by calling 618-536-2441 or by e-mailing currinst@siu.edu. All programs require a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Curriculum and Instruction. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Arts in Teaching Degree

SIUC's Master of Arts in Teaching (M.A.T.) program is an alternative certification and degree program intended for persons who have successfully completed an undergraduate degree (Bachelor of Arts, Bachelor of Science, or Bachelor of Fine Arts) in the liberal arts or sciences and desire to pursue licensure for teaching at the

secondary school level. Those enrolled engage in a year-long internship (two semesters) in a public school setting while also completing university-based studies culminating in the Master's degree. The M.A.T. is designed as a high-quality, technology-rich, accelerated teacher certification program; time-to-degree is approximately fifteen (15) months, including one full academic year and two adjacent or contiguous summer sessions of course work. Those holding undergraduate degrees in teacher education are ineligible for this program.

M.A.T. candidates select an area of concentration most compatible with coursework in the major content area that was completed during a bachelor's degree program. Area of concentration options include:

Agriculture (General)	Health
Art	History
Biological Sciences	Mathematics
Business	Physical Education
English	Social Studies
Family & Consumer Science	Spanish
French	

Upon graduation from the program, candidates will be certified to teach in a school system in Illinois or in a state offering reciprocity. They will be broadly prepared in their content areas and will possess leadership experience pertinent to the public school setting. M.A.T. candidates advance through the program as members of an interdisciplinary cohort of 25 students and are required to work collaboratively within that cohort to investigate and make recommendations about school-based programs and issues using action research methodologies.

Admission. Admission to the M.A.T. program is highly competitive. Applicants with undergraduate degrees in mathematics, foreign language, or the sciences are targeted (because of national teacher shortages in these content areas), but other applicants meeting admission requirements will be considered. In addition to materials required for general admission to the Department and the Graduate School, M.A.T. applicants must submit: (1) a résumé; (2) letters of reference from two content area faculty members familiar with the candidate's undergraduate performance; (3) a passing score from the Illinois Certification System Test of Basic Skills (September or December test dates are recommended); and (4) a passing score from at least one Illinois Certification Testing System Test of Subject Matter Knowledge in an appropriate secondary level teacher certification area (September or December test dates are recommended). Candidates must meet the following minimum grade point requirements (based on a 4.0 scale): (1) an overall undergraduate grade point average of 2.75; (2) a grade point average of 2.75 in the final 60 hours of undergraduate course work; and (3) a grade point average of 2.75 in the content area for which certification is sought. In years where the number of qualified candidates exceeds the Department's capacity to handle increased enrollment numbers, candidates may be asked to attend a half-day admission seminar during which an on-site essay and videotaped interview will be obtained for use in making final selection decisions.

Retention and Graduation. Students in the M.A.T. program are expected to complete the degree in two intersession/summer terms and one academic year. To

complete degree requirements within these 15 months, candidates enroll in the following blocks of courses to earn a minimum of 41/maximum of 50 graduate credits, dependent on the area of concentration selected.

Intersession 1	CI 543 (5):	Fundamentals of Teaching and Learning
Summer 1	SPED 408 (3):	Integrating Children and Youth with Disabilities in Normalized Environments
	CI 544 (3):	Action Research Methods
	EDUC 550 (3):	Experimental Education (Introduction to the Library of Congress <i>Adventure of the American Mind</i> Technologies)
Fall	Content Area Methods (3-6) ¹	
	Content Area Elective (3-4) ²	
	CI 594-K (4):	M.A.T. Apprenticeship (teaching practicum)
Spring:	Content Area Elective (3-4) ³	
	EDUC 501 (6):	M.A.T. Internship (student teaching)
Intersession 2:	CI 571 (3):	Secondary School Curriculum
Summer 2	CI 465 (3):	Advanced Teaching Methods
	CI 561 (3)	Reading and Learning Content and Technical Text
	CI 533 (3):	Instructional Leadership (Teacher Leadership)

To remain in the program, M.A.T. candidates must maintain a minimum overall graduate grade point average of 3.25 and obtain successful field experience evaluations at the end of the fall and spring semesters.

To graduate, the candidate must: (1) prepare and share publicly a professional exhibit to demonstrate professional

growth over the 15-month degree program; (2) publicly present results and recommendations from an action research collaborative project to a university and school faculty review committee; (3) achieve the equivalent of a 3.0 in the teaching apprenticeship and internship; and (4) successfully implement an instructional unit or lesson plan employing Library of Congress *Adventure of the American Mind* digital resources and technologies.

Master of Science in Education Degree

The Master of Science in Education degree in Curriculum and Instruction requires the completion of a minimum of 32 or 36 hours of course work, depending on the research requirement selected. At least 15 of the required semester hours must be at the 500 level and taken at SIUC. The student must also meet Curriculum and Instruction core course requirements, research requirements, and specialty area requirements. No more than six semester hours of credit earned at another NCATE/TEAC- accredited or equivalent college or university may be accepted toward this degree. All transfer credits must be approved by the coordinator of the student's specialty area.

Each candidate's program is planned in consultation with a faculty adviser from the specialty area selected by the student, with consideration for the student's interests, experience, and specialty area. Nondeclared graduate students are advised to consult with the department chair concerning admission to the master's program.

A student desiring teacher certification (preschool, elementary, secondary, or K-12) must be admitted to the Teacher Education Program and must follow the teacher certification entitlement process established by SIUC in conjunction with the Illinois State Board of Education. An alternative route to certification is available through the College of Education and Human Services for qualified candidates. Several areas of study offer coursework designed to meet certification or endorsement requirements set by the Illinois State Board of Education. Consultation with an adviser and a carefully determined program of study can lead to the desired certification or endorsement.

Admission and Retention. Admission to the master's program requires a 2.7 gpa for the last 60 hours of the bachelor's degree as well as the recommendation of the specialty area faculty. A TOEFL score of at least 550 (220 computerized score) is also required for international students and must be no more than two years old. Students must maintain an overall 3.0 graduate gpa to be retained in the master's program. The progress of each student is reviewed periodically. Students who do not make satisfactory progress, or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The Master of Science in Education degree in Curriculum and Instruction requires a nine semester hour professional core and specialty area courses

¹ Content area methods courses vary by area of concentration and credit hour assignment. In addition, they may or may not carry graduate credit, but are required for program completion or certification.

² Content area elective courses should be at the 400-level or above; credit hours vary by area of concentration.

³ Content area elective courses should be at the 400-level or above; credit hours vary by area of concentration.

(12 to 15 semester hours). The professional core consists of C&I 500, Research Methods in Education; C&I 503, Introduction to the Curriculum; and C&I 504, Systematic Approaches to Instruction. All professional core courses must be completed with a grade of C or better, and an overall grade point average of 3.0 must be obtained for the professional core. The specialty area program consists of either 23 semester hours of coursework including a thesis or 27 semester hours of coursework. The minimum number of required semester hours is 32 for students completing a thesis or 36 for students completing the coursework only option.

Doctor of Philosophy in Education Degree

The Doctor of Philosophy in Education degree with a concentration in Curriculum and Instruction is designed for teachers and other educational personnel who seek to improve their performance in general and specialized areas in either the public schools or the private sector. This program is designed for students who desire positions requiring advanced preparation at the highest level with emphasis on theories of curriculum and instruction and in-depth preparation in research. For example, this program is oriented toward students who aspire to positions with institutions of higher education, state departments of education in the United States, ministries of education in foreign countries, educational sections of human service agencies, business and industry, and public schools.

Admission. In addition to the application for admission to the Graduate School, the applicant must also complete the departmental application for admission to the concentration and the related specialty area. A selection and review committee screens the applicant on the basis of prior graduate work, grade point average, standardized test scores (Graduate Record Examination), research ability, work experience, and letters of recommendation. The TOEFL score is required for international students and must be no more than two years old. The GRE score must be no more than five years old. The selection committee recommends admission of the student only if the specialty area has an appropriate sponsor for the applicant and if a faculty member who is qualified to direct dissertations agrees to serve as chair of the student's doctoral committee.

The admissions committee may possibly recommend a student for admission who shows some deviation from departmental standards if, in the committee's opinion, the student shows unusual professional promise.

Retention. Any prospective doctoral candidate with a grade point average of less than 3.25 and 20 semester hours of doctoral work will not be allowed to continue in the program and will not be re-admitted at a later date. Students must accumulate an overall grade point average of 3.50 for all doctoral work to qualify to take the preliminary examination.

Prior to the completion of 30 semester hours of course work, students meet with their major professors to

determine whether or not to continue as doctoral students. Such matters as grade point average, progress in the program, course completion, motivation, general academic scholarship, and skills in writing and research are considered. A report is then made to the doctoral committee and the department chair. Students who are not making satisfactory progress or who violate the regulations of the department, college, or university, may be dropped from the program.

Program Requirements. The concentration in Curriculum and Instruction has both College of Education and Human Services and departmental requirements. A minimum of 64 semester hours beyond the master's degree is required. The College of Education and Human Services professional core of 8 semester hours consists of EDUC 590, Doctoral Seminar in Cultural Foundations of Education and EDUC 591, Doctoral Seminar in Behavioral Foundations of Education.

The Curriculum and Instruction requirements include a core of nine semester hours; at least 23 semester hours in the selected specialty area; research tools usually totaling 8 semester hours or the equivalent (hours for research tools are not counted in the total of 64 semester hours); and a minimum of 24 semester hours of dissertation. An internship of 2 to 8 semester hours is highly recommended. Courses comprising specialty area hours other than the core courses are determined by the student and the doctoral committee. No more than six semester hours of credit earned at another NCATE/TEAC- accredited or equivalent college or university may be accepted toward this degree. All transfer credits must be approved by the coordinator of the student's specialty area. The professional core of courses in the Curriculum and Instruction concentration includes: C&I 582, Advanced Research Methods in Education; C&I 583, Instructional Theory, Principles, and Practices; and C&I 584, Curriculum Theory, Foundations, and Principles. All professional core courses must be completed with a grade of C or better, and an overall grade point average of 3.0 must be obtained for the professional core.

Research Requirements. Research tools are selected on the basis of their appropriateness for the area of concentration, specialization, and type of dissertation research. At least one research tool, as outlined by the College of Education and Human Services is selected by the doctoral committee in cooperation with the graduate student. The 8 options available are: quantitative methods, historical methods, foreign language methods, philosophical methods, qualitative methods, and other methods.

Preliminary Examination. The preparation and direction of the preliminary examination are the responsibility of the specialty faculty and the student's doctoral committee. Concepts related to curriculum, instruction, and research/evaluation will be integrated into the preliminary

examination. Additional oral and written examinations may be required by the student's doctoral committee.

The examination is offered 3 times a year: Wednesday, Thursday, and Friday of the fifth week of each term. A student may take the examination no more than 3 times.

Prospectus, Dissertation, and Final Oral Examination. Students may not register for more than 6 dissertation hours until they have been advanced to candidacy. Having been admitted to candidacy, students submit prospectuses to their doctoral committees for approval. The dissertation must show high attainment in an independent original, scholarly, and creative effort. A student's dissertation will be circulated to members of the doctoral committee at least 3 weeks in advance of the proposed defense.

The Department of Curriculum and Instruction requires an oral examination conducted by the doctoral committee. Oral examinations are open to all interested observers. Notice of the time and place of the examination and the abstract of

the dissertation are circulated throughout the department and the University.

Certificate in Gerontology

The Department of Curriculum and Instruction participates in the Certificate in Gerontology interdisciplinary program. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Certificate in Conflict Resolution

The Department of Curriculum and Instruction participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers C & I 402 and C & I 594 as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses (CI)

400-3 Introduction to Instructional Games and Simulations. Analyzes the use of simulations and games as instructional methods in both educational and training situations. Projects involve developing and evaluating instructional games and simulations.

401-6 Designing Video Games for Instruction and Assessment. Designing and creating playable video game modules by modification using a game development kit, for classroom learning, instruction, and assessment. Students will learn how to design instructional games (or serious games) using appropriate instructional design and development models.

402-3 The Study of Cultural Diversity in Education and Family Services. The student examines origins, characteristics of behavior, learning patterns, family constellations and lifestyles of the diverse cultural groups in our community, state and nation. Students will identify their own cultural background and biases; recognize diversity resulting from ethnic origin, gender, age or disability; and experience ways of learning about cultures other than their own that promote constructive communication and integration into all as

403-3 Child Abuse and Neglect. Examines the many facets of child abuse and neglect. Emphasis is on current research in the field, as well as the roles and responsibilities of various professionals who work with children and their families.

404-3 Infant Development. Current theories and knowledge concerning growth and development of infants with related laboratory field experiences. Prerequisite: 237 or Psychology 301 or equivalent.

405A-2 Methodologies For Group Care of Infants and Toddlers. Students will develop competencies and skills needed by early childhood professionals for work with

children up to the age of three in an inclusive group care situation. Emphasis is on planning developmentally appropriate curriculum and assessment and stimulating environments for infants and toddlers. Students are required to have concurrent enrollment in 405b. Prerequisite: 318a, 318b, 404.

405B-2 Practicum in Methodologies for Group Care of Infants and Toddlers. This practicum will prepare students to work in optimal learning environments for infants and toddlers. Participation is four hours per week (fall and spring) and eight hours per week (summer) at the SIU Child Development Laboratories. Students are required to have concurrent enrollment in 405a. Prerequisite: 318a, b, 404.

407-3 to 9 (3 per topic) Diagnostic Teaching Strategies for Classroom Teachers. Diagnostic instruments and teaching techniques with an emphasis on understanding and teaching students under-achieving in the areas of (c) Language arts, (e) Mathematics, and (f) Reading. Prerequisite: 423 (c), 322 (e), 422 (f) or consent of instructor.

408-3 Current Issues in Early Intervention. This course will examine developmental ecology of early intervention and the dynamic processes by which children and their environments interact. A comprehensive overview of the knowledge base and critical assessment and implementation strategies of early childhood intervention along with intervention models and appropriate practice will be covered Prerequisites: CI 237, SPED 405 or consent of instructor.

409-3 Creative Teaching. To assist pre- and in-service teachers in acquiring methods and materials that will improve instruction in the public school classroom, with special attention to the characteristics and needs of

students. Prerequisite: Education 316 or consent of instructor.

410-2 Creative Writing in the Public School. Techniques of encouraging creative writings in the schools.

412-3 to 15 (3 per topic) Improvement of Instruction in Early Childhood Education (Preschool-Grade 3). Examines recent findings, current practices and materials used in early childhood education in the fields of (c) Language arts, (d) Science, (e) Mathematics, (f) Reading and (g) Social studies. Prerequisite: specialized methods course for the field of study selected by the student.

413-3 Language Development of the Young Child, 0-8 Years. The normal language development and communication skills of the young child will be the focus of this course; attention will be given to an integrated, holistic philosophy toward development and learning in young children ages 0-8; specifically focusing upon social and environmental influences on the development of language and literacy, students will observe, listen, record and analyze samples of young children's communication. Prerequisite: 237 or Psychology 301 or graduate standing.

415-3 Modern Approaches to Teaching Middle School Mathematics (Grades 4-8). Examines current mathematics materials and teaching approaches. Hands-on experience with a multitude of teaching aids including microcomputers and problem solving materials. Student exchange of ideas and discussion of activities for classroom use. Prerequisite: 322 and an overall GPA of at least 2.75.

417-3 Administration of Early Childhood and Family Programs. This course introduces students to the planning, organizing, and daily management of programs serving young children and their families. Topics will include funding/budgeting, staffing, programming, and evaluation. Prerequisite: 318.

418-3 History and Philosophy of Early Childhood Education. A survey of the history and philosophies of early childhood education with implication for current program practices. Students' analysis of their personal philosophy of early childhood education. Prerequisite: senior or graduate standing; 318; or consent of instructor for graduate students.

419-3 Child, Family and Community Involvement. The course is designed to provide students with the knowledge and skills needed to work successfully with parents and parent groups in individual and community settings. The focus will be on strengthening adult-child and parent-staff relationships in home, school and community settings. Parent involvement in early childhood programs and parent education will be stressed. Prerequisite: 227 and/or concurrent enrollment in 318; or consent of instructor for non-early childhood major and/or graduate students.

420-3 Adult Literacy Strategies. The focus is on understanding the problems of the individual whose literacy level does not permit full participation in economic, social, family and civic opportunities. Emphasis is placed on developing strategies to support and strengthen adult literacy skills.

421-3 Building Family Literacy Programs. This course will provide an in-depth look at family literacy. Emphasis will be placed on the history and foundations of family literacy, research, program models, quality programming, program evaluation and funding. The course is designed for both the experienced and developing family literacy professional. Prerequisite: 419.

422-3 Teaching Reading in the Elementary School. (Same as Special Education 422) Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis also on the formulation of reading and its implications in relation to methods, materials, organizational procedures, and evaluation techniques. Prerequisite: for Elementary Education majors: grade of C or better in 321, 435 and Education 313 or consent of instructor; for Special Education majors; admission to the Teacher Education Program.

423-3 Teaching Elementary School English Language Arts. Oral and written communication processes with emphasis on the structure and process of the English language arts in the elementary school. Specific attention to the fundamentals of speaking English, writing, spelling and listening. Study of learning materials, specialized equipment and resources. Prerequisite: Speech Communication 101 or equivalent, C or better in Curriculum and Instruction 321 and 435 or consent of instructor.

424-3 Teaching Elementary School Social Science. Emphasis on the structure and process of teaching social science in the elementary school setting. Specific attention to the fundamentals of developing social science objectives, planning units, developing a general teaching model, organizing the curriculum and evaluating behavioral change. Study of learning materials, specialized equipment and resources. Prerequisite: grade of C or better in 422, 423 and 426 or consent of the instructor.

426-3 An Introduction to Teaching Elementary School Science. Content and methods of elementary school sciences, grades K-8. Emphasis on the materials and strategies for using both traditional and modern techniques of science education. One or more field trips. Prerequisite: Grade of C or better in 321 and 435 or consent of the instructor.

427-3 Science Process and Concepts for Teachers. Specifically designed to develop those cognitive processes and concepts needed by elementary school teachers in the teaching of modern science programs. Prerequisite: grade of C or better in 422, 423 and 426 or consent of instructor.

428-3 Inquiry Skills for Teaching Junior and Senior High School Science. The major focus will be the application of inquiry skills as used in all areas of science instruction at the junior and senior high school levels; students will be expected to demonstrate mastery of basic and integrated science process skills through conducting and reporting results of science investigations.

435-3 Literature for Children and Early Adolescents. Studies types of literature; analysis of literary qualities; selection and presentation of books and other media for children and early adolescents; and integration of literature in preschool, elementary and middle school and library settings. Prerequisite: admission to the Teacher Education Program, C or better in English 101 and 102, and overall GPA of 2.75; or consent of instructor.

437-3 Instructional Technology in Training Programs in Business and Industry. Examines the role that performance and instructional technology plays in current training practices in business and industry. The organization, staffing, budgeting and evaluation of training and development departments are presented. The kinds of performance problems typically encountered by corporate training departments are addressed. Field trips are expected.

441-3 Multicultural Literature for Children. Identification, selection and evaluation of books and audiovisual materials dealing with various cultural groups such as African Americans, Asian Americans, Native Americans, Hispanic Americans and European Americans. Prerequisite: 435 or consent of instructor.

445-3 Literature for Young Adults. The selection and use of books and other educational media for students in the junior and senior high school.

452-3 Video Production. Video has become an essential aspect of teaching, training, and communications. This course is an intensive workshop that provides a thorough understanding of video formats and production techniques. Laboratory fee: \$20.

455-3 Design and Development of Self-Instruction Systems. Introduction to the theory and practice of self-instruction systems with a particular emphasis on the creation of instruction for mastery. Various self-instruction systems are reviewed and procedures for designing, developing and evaluating these systems are discussed. Includes planning a teaching unit and creating a self-instruction package for the unit. Laboratory fee: \$20.

458-3 Classroom Teaching with Television. Classroom utilization of open and closed circuit television. Emphasis is placed on the changed role of the classroom teacher who uses television. Evaluation of programming, technicalities of ETV and definition of responsibilities are included. Demonstration and a tour of production facilities are provided.

460-3 Teaching Reading and Writing in the Middle Grades. Familiarizes middle grades teachers with issues relevant to instruction in literacy skills essential to learning in any subject area. Students will demonstrate personal competency relevant to these skill and understanding of strategies for identifying problems and developing literacy competencies in young adolescents. Prerequisite: Curriculum and Instruction 422 (for elementary majors), 360 (for secondary majors), or consent of instructor.

462-3 Middle and Junior High School Programs. Focuses on the development of middle and junior high school curriculum and the identification of instructional activities for early adolescents. Emphasis is placed on development of literacy strategies, developmentally appropriate teaching strategies, interdisciplinary unit planning, teaming, and technologies and materials appropriate for teaching early adolescents, ages 10-14. Prerequisite: Education 313 or consent of instructor.

463-3 Meeting in Social and Emotional Needs of Gifted Children. Deals with strategies for meeting the social and emotional needs of gifted children in the classroom. In particular, this course focuses on low-incidence gifted students, including underachievers, minorities and females. The course will not only cover particular curriculum and instruction strategies designed for this population but also will emphasize strategies for teachers to be more facilitative in assisting these students to accept and realize their potential. Prerequisite: 467 or consent of instructor.

464-2 Student Activities. Analysis of extra-class activities and programs in public schools with a focus on the status, trends, organization, administration and problems.

465-3 Advanced Teaching Methods. The focus is on a variety of teaching methods and strategies, which are appropriate for secondary and/or post-secondary educators. Both individual and group methods are emphasized.

466-3 Documenting Accomplished Teaching. This course will help teachers understand and gain requisite skills for participation in the National Board for Professional Teaching Standards (NBPTS) certification process. As part of learning to understand and document NBPTS standards, teachers will describe, analyze and reflect on drafts of written commentaries, videotapes of small and large group lessons, and student work.

467-3 Methods and Materials in the Education of the Gifted. Content focuses on the most appropriate instructional strategies and materials to be utilized with the gifted. Time spent practicing teaching models, designing materials and developing teaching units. Emphasis placed on techniques for individualizing instruction for the gifted and talented students.

468-3 Science Methods for Middle and Senior High Schools. A performance-based approach to instructional skills common to teaching natural science at the middle and senior high school levels. Three class hours and one micro teaching laboratory hour per week.

469-3 Teaching Social Studies in the Secondary School. Emphasis is placed on the analysis and evaluation of the social sciences with focus on instructional strategies and curricular designs in the teaching of history, geography, political science, economics, and sociology. Prerequisite: Education 313 or consent of instructor.

470-3 Advanced Secondary Social Science Teaching Methods. This course will help students develop instructional materials and curricular designs for history and social science classrooms at the secondary level. Students

will also have an opportunity to gather, analyze, corroborate, and synthesize sources and data for research they can then incorporate in their own classroom. Integrating technology in instruction and assessment will also be emphasized.

473-3 Teaching in Middle Level Schools. Acquaints students with tissues of teaching young adolescents and the role of teachers in connecting school with community resources. Information from current area specialists and exemplary practitioners extend appropriate teaching strategies and supplement background knowledge on special topics related to social, emotional and physical development related to the curriculum. Lab fee: \$10. Prerequisite: CI 462, Education 313 or consent of instructor.

482-3 Instructional Internet Applications. An introduction to using the Internet to deliver instructional materials and activities. Includes using the Internet to enhance classroom learning through research, communication, and instructional activities. Also covers evaluation, design, and development of Internet-delivered instructional materials. The emphasis is on lesson and workshop level instruction rather than delivering complete courses on the Internet. Laboratory fee: \$20.

483-6 (3,3) Instructional Applications for Microcomputers. A study of the development and use of microcomputers systems in educational settings. Emphasis is upon the characteristics, capabilities, applications and implications of microcomputers and microcomputer lessons, with case studies of their integration into the teaching, learning process.

484-3 Interactive Multimedia for Learning. An introduction to the evaluation, design, and development of interactive instructional multimedia programs. The instructional methods of tutorial, drill-and-practice, simulation, games, and educational games are covered. Instructional theory and design aesthetics are included. Projects include designing, developing, and use-testing interactive instructional multimedia programs. Laboratory fee: \$20.

486-6 (3,3) Instructional Authoring Systems. Designed to give students experience using authoring systems, languages and utilities for the design, development, production, and integration of WEB-based technology into educational settings. Tools will include various commercial and consortium authoring tools, such as the Macromedia Studio. Laboratory fee: \$20. Prerequisite: consent of instructor.

487-3 Web-based Applications for Teachers and Instructors. Survey of trends and developments and laboratory instruction in the use of Web-based applications representative of those used by teachers, education specialists, or instruction in educational settings. An emphasis is placed upon developing skills used by teachers, education specialists, or instructors which enhance and facilitate the education processes within a Web-based learning environment. Laboratory fee: \$20.

495-2 to 8 Field Experience. Supervised learning experiences in settings for children and families and public agencies. Prerequisite: 318, 405 and consent of instructor.

496-2 to 6 (2 to 4 per semester) Field Study Abroad. Orientation and study before travel, readings, reports and planned travel. Includes visits to cultural and educational institutions. Maximum credit hours in any term are 4.

498-1 to 15 (1 to 3 per topic) Workshops in Education. Critical evaluation of innovative programs and practices. Acquaints teachers within a single school system or in a closely associated cluster of school systems with the philosophical and psychological considerations and methods of implementation of new programs and practices in each of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood education, (i) Elementary education, (j) The middle school, (k) Secondary education, (l) School library media, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of six hours toward a Master's degree. Prerequisite: consent of instructor.

500-3 Introduction to Research Methods in Education. An introduction to research methodology as it is applied in carrying out educational studies. Basic skills of planning, executing and reporting educational research will be studied and applied, with the construction of a research proposal as a term project.

501-3 Improving School Reading Programs. For teachers, reading specialists, instructional leaders. Current issues, trends, practices in improving school reading programs at all levels. Special emphasis on school based management, teachers as change agents, curriculum evaluation, staff development and roles of school personnel. Participants assess existing programs and develop improvement plans. Prerequisite: 512, 513 or 561.

503-3 Introduction to the Curriculum. Deals with the nature, purposes and functions of curriculum planning and development; curriculum design and organizations; curriculum implementation and maintenance; and curriculum evaluation as each component relates to the total curriculum.

504-3 Systematic Approaches to Instruction. Gives graduate students an opportunity to investigate, discuss and apply systematic approaches to instruction. Special emphasis is given to that element of the instructional system, which allows for the integration of instructional media into the process.

506-3 Professional Services for Diverse Family Structures. Case analysis of different family structures through seminar teams. Each team will be responsible for analysis of the interaction of the family structure and the economic, nutritional, and socializing activities carried out within the family-household. Role and sources of assistance

through current programs will be included. Prerequisite: consent of instructor.

507-3 The Impact of Public Policy on Family Life. This course focuses on an analysis of policies that impact the lives of children and families and includes an overview of the legislative process at the local, state, and national levels. The course emphasizes practical ways in which we can become proactive and effective advocates for children and their families.

508-3 Systematic Observation and Analysis of Instruction. Students will learn to use conferencing techniques and to construct and use valid and reliable systematic observation instruments to provide the basis for analysis and feedback about classroom instruction.

509-3 Foundations of Environmental Education. Designed specifically to provide teachers, administrators and curriculum specialists with the knowledge and skills necessary to implement environmental education strategies in both elementary and middle schools. Includes work in ecological foundations, programs currently in use, unit designs, methods and research. One or two field trips may be required.

510-3 Values Education Curriculum. Alternative views of the impact of schooling on children's values will be explored. Current curricular approaches to moral education will be examined with special emphasis given to values clarification and the cognitive-developmental approach of Lawrence Kohlberg. Psychological and philosophical assumptions underlying the major approaches to moral education will be critically examined.

511-3 Seminar in Psychology of Elementary School Subjects. Psychological principles of learning theories as applied to the mastery of materials used in elementary and early childhood education school subjects. Emphasis is placed on implications of theories of learning for curriculum development and instruction.

512-3 Reading in the Elementary School. First course in the reading sequence. Survey of the reading process. Introduction to factors affecting the reading process, the common core of skills, teaching strategies, materials and research.

513-3 Emergent Literacy. A study of early literacy. Explores the foundations of family literacy as the basis for continued development of reading and writing in kindergarten and the primary grades.

514-3 The Pre-School Child. Growth of the child from birth to six years with emphasis on the various aspects of growth and the interrelationships.

515-3 Advanced Remediation in Mathematics. Strategies for the design of prescribed systematic instruction for correcting identified mathematics difficulties. Experience in designing and preparing materials for corrective purposes. Prerequisite: 407e or consent of instructor.

516-3 Teaching Mathematics in the Elementary School. Master's degree level course, which acquaints the student with, approaches to teaching, development of curriculum

materials and authoritative positions on the mathematics of grades K-8. Emphasis on teaching aids, problem solving and recent developments at this level.

517-3 Early Childhood Programs: Organization and Administration. Presents an overview of the organization and administration of programs for children ages three to eight with experiences in planning for operating and administering such programs. Prerequisite: 316, 518 or consent of instructor.

518-3 Early Childhood Curriculum and Methods. A survey of current problems and practices in early childhood education for children from three to eight years of age, with emphasis on reading in current research literature. Prerequisite: consent of the instructor.

520-Research in Early Childhood Education. Major trends and current issues in research as they relate to child development and early childhood programs will be explored. Special emphasis will be placed on the relationship of research to professional preparation and practice. Prerequisite: early childhood students who have taken all core courses for completion of the master's degree.

521-4 Advanced Diagnostic Teaching of Reading. Emphasizes diagnostic teaching strategies that teachers and reading specialists employ when dealing with under achievement in reading. Students use informal and formal tests, observation and trial lessons to select instructional materials and activities appropriate to different reading/writing problems. Each student tutors persons while being supervised in the Clinical Center. Prerequisite: 512 or 513 or 561, 407f and consent of instructor.

522-3 Integration of Technology in Mathematics and Science Teaching. Integrating technology in Math and Science teaching. Technology may include calculators, computer software, computer-based laboratories, data collection devices, interactive manipulatives, and other internet resources. Special approval needed from the instructor.

523-3 Language Arts in the Elementary School. The practical bearing of investigation and theory on the improvement of current practices in the teaching of the language arts other than reading. Attention given to evaluation of teaching materials in these areas. Prerequisite: 423.

524-3 Teaching the Social Studies in the Elementary School. A study of theory and practices of teaching and developing programs in elementary school social studies. Particular attention to be given to trends and issues in social studies. Various social studies models will be examined and evaluated for practical use. Students must demonstrate behaviorally the competencies and skills related to successful performance in the teaching of social studies.

525-3 Integration of Technology into Mathematics Education [PreK-8]. Technology use in mathematics teaching and learning, such as handheld calculators/computers; hands-on experience in teaching with easily learned tools for teaching/learning mental

computation, computation, algebra, geometry, probability, statistics and use of software - e.g., Shapemakers, Geometer's Sketchpad, Excel, graphing calculators, computer-based laboratories, data collection devices, interactive websites and other internet resources.

526-3 Problems in Elementary School Science Education. Emphasis upon identifying problems and trends within elementary school science education and planning for research in this field. Prerequisite: 426.

527-3 Advanced Family Studies. Examines contemporary American families with emphasis upon the strengths, diversity, and challenges associated with each of the variant forms of family life. Focuses particularly on the implications of these issues for families with young children.

528-3 Methods for Teaching Mathematics in the Preschool and Early Childhood Grades (Pre K-3). Acquaints the student with the learning characteristics of children and teaching methods at grades pre K-3. Emphasis on concrete manipulative teaching aids, learning readiness and diagnosis of learning difficulties.

529-3 Modern Approaches to Teaching Secondary School Mathematics. (Same as Mathematics 511.) Topics will include problem solving, applications of mathematics and teaching proofs in secondary school mathematics. Practical classroom use of materials will also be emphasized. Prerequisite: consent of instructor.

530-3 Teaching Problem Solving in School Mathematics (Grades K-8). Designed to acquaint teachers with problem solving processes and how to integrate problem solving into their teaching. Emphasis is placed on teaching the process of problem solving. Prerequisite: graduate standing or consent of adviser.

531-3 Curriculum for Elementary & Middle Level Schools. Designed to assist teachers and administrators in making curricular decisions for elementary and middle level schools based on knowledge of educational foundations, standards, learning experiences, research, materials and methods, instructional programming and evaluation.

532-3 Courseware Design and Analysis. The analysis of principles and strategies employed in the design of computer based courseware and computer based training materials. Emphasis upon examining educational, social and psychological learning principles and the assumptions used by authors of computer software in the design of K-12 software and computer based training materials. Laboratory fee: \$20.

533-3 Instructional Leadership. A study of research and related literature concerning the roles and responsibilities of various instructional leaders in public and private schools, professional development centers, state departments of education and college or university settings. Leadership styles and behaviors, especially as they apply to the academic circumstances and environments in specific case studies, are examined.

534-3 Organization of the Elementary School. An analysis of types of elementary school organizations with

special attention to influence of school organization upon the educational program. Application of research findings to selection and use of materials of instruction. Special consideration to classroom teacher's professional problems.

535-3 Reading and Language Arts Research Seminar. Students survey current research in Reading and Language studies and present a research paper to the seminar participants. Prerequisite: 500, nine hours coursework in reading and language arts, and consent of instructor.

536-3 Partnerships and Mentoring the New Professional. A study of the theories, practices and research of Professional Development Schools and other collaborative teacher education and school reform initiatives with special attention given to the issues of collaboration and cooperation, team building and consensus building, honoring diversity and change, and educators as problem solvers.

537-3 Current Issues in Mathematics Education. This course provides graduate students with opportunities to study, discuss, and critically analyze issues and research in mathematics education. Students will become familiar with the major problems and issues facing mathematics educators at all school levels. Examination of recent mathematics education literature will be included as students gain and overall perspective on the discipline of mathematics education.

538-3 Research in Mathematics Education. This course provides graduate students with opportunities to study, discuss, and make critical analyses of recent mathematics education literature and issues in the USA and other countries. Students will gain a better perspective on NCTM Standards and their relationship to research as they develop a detailed lesson plan in mathematics and conduct both a literature review and a data analysis report in mathematics education. Prerequisite: CI 537

540-3 Learning Models for Instructional Design and Technology. Surveys models of learning as they apply to the fields of Instructional Design and Instructional Technology. Models ranging from behaviorism to constructivism are covered along with theories concerning cognitive development and motivation. Theories are applied to analyzing instructional situations.

543-5 Fundamentals of Teaching and Learning. First course in the M.A.T. program sequence. Its focus is on development of a specific set of planning skills secondary level teachers need to appropriately design, implement, manage, and assess student learning. The course is offered annually during spring intersession only. Prerequisite: acceptance into specific MAT cohort.

544-3 Action Research Methods. The focus of the course is on learning about action research, learning to develop and use various data collection tools, developing an action research question, learning about and using various data analysis tools, developing a report, and presenting a research report to an audience of colleagues and peers. Prerequisite: 543, Letter grade/DEF.

551-3 Research and Design in Instructional Gaming. Survey of research, trends and developments in serious games and instructional gaming. Students will learn to storyboard and develop computer games for "serious play" during the course. Prerequisites: CI 400 (3) or consent of instructor.

553-3 Instructional Development. Intended for media specialists and instructional developers, this course applies current research and technology to the solution of instructional problems. The student is guided through the systematic process of identifying instructional problems, specifying objectives, analyzing tasks and learners, organizing resources, specifying methods and media and assessing outcomes. The role of the instructional developer as a helping professional will also be examined. Prerequisite: 504.

554-3 Utilization of Educational Media. The utilization of print and nonprint materials in instructional implementation and curriculum development. Structured for teachers, media directors, administrators and instructional designers. The increasing role of technological advances in education is stressed as they relate to learning theory and curriculum development.

555-3 Visual Communication. How to communicate with pictures in the classroom, the design of still and motion pictures, pictures used in teaching perception and the place of pictures in advertising and communication.

556-3 Advanced Development of Interactive Learning Systems. Design, development and evaluation of an online, interactive learning (e-learning) system using instructional design principles and models. Students must successfully complete CI 486 (3,3) or have equivalent training or experience to enroll in this capstone course. Prerequisite: CI 486 (3,3) or consent of instructor.

557-3 Task Analysis. Builds competence in applying the most current task and content analysis techniques used to make explicit the components of complex human performances and knowledge. Includes learning hierarchy analysis, information processing analysis, path analysis, job task analysis, skills analysis, fault tree analysis, concept analysis, knowledge engineering, matrix analysis, and pattern noting. Prerequisite: 504 or consent of instructor.

560-3 Content Management and Delivery for e-Learning. Survey of trends, developments, and laboratory instruction in the use of Content Management Systems for Internet Delivery of learning materials in education, business and other e-learning settings. Emphasis is placed on learning the process for developing, managing and delivering content and resources to facilitate online learning processes.

561-3 Reading and Learning Content and Technical Text. For secondary and college teachers, and others who desire strategies to help students and workers learn from texts. Special emphasis is on how to help others improve their ability to comprehend, study and use texts and other print material encountered in secondary school and the workplace.

564-3 Curriculum Development for Gifted Students. Presentations related to the knowledge and decision-making required to develop curriculum for gifted students, including philosophy, goals and objectives; designing and sequencing activities; curriculum models for gifted students; evaluation and modification of curriculum. Emphasis is placed on the development of curriculum for gifted students to be used in schools.

566-3 Instructional Strategies for Problem Solving. The focus is on developing those teaching strategies, which will foster and enhance problem solving skills and heuristic thinking. Representative of these teaching skills would be inductive and deductive approaches, discovery and inquiry techniques, and questioning strategies.

569-3 Principles and Trends in Secondary School Social Science. An evaluation and study of social studies trends and practices as they are related to curriculum, organization and instruction at the junior and senior high school levels.

570-3 Current Issues in Social Science Education. This course uses historical and contemporary perspectives to explore the nature and purposes of social studies education in American K-12 schools.

571-3 Secondary School Curriculum. An introductory course designed to explore the nature and development of the curriculum at the secondary school level. Historical perspective and foundations of curriculum are examined. Functional applications to the public secondary schools are emphasized.

573-3 Perspectives on the Future and Its Schools. Deals with the future development of education and social trends, which will influence that development. Emphasis is placed upon alternative models of education and their social bases.

575-3 Critical Issues in Instructional Supervision. Students will examine the history, nature and evolution of supervision for instructional improvement. Students will be introduced to concepts, theory and research findings from many fields of study that have implications for today's supervisory process. Supervisory assumptions and practices will be examined in light of current knowledge of teaching effectiveness.

576-3 Critical Issues in Teacher Education. Students will examine critical issues, problems, and trends in teacher education. Emphasis is placed on strategies for clarifying the issues, solving the problems and examining the possible impact of the trends.

577-3 Seminar in International Mathematics in Education. Deals with goals, contents, teaching methods, teacher training, curriculum development and research literature on mathematics education at the international level. Prerequisite: graduate standing or consent of adviser.

578-3 Advanced Study of Mathematics Education. Study of the practical and theoretical development of mathematics curricula and instruction, and viewing mathematics curricula and instruction from philosophical and psychological perspectives. Prerequisite: advanced graduate study or consent of adviser.

580-3 Current Trends in Education. Trends, issues, problems in education related to the student, program, school organization, staff, material and media, the school building, and the process of innovation and change.

582-3 Advanced Research Methods in Education. The study and application of advanced skills used in planning, executing, reporting and utilizing educational research. Prerequisite: 500 or evidence of equivalent research competencies.

583-3 Instructional Theory, Principles, and Practices. Presentation of conceptual formulations and skills concerning instructional theory and principles; foundations of instruction; instructional systems and models; delivery processes (logistics), systems, and maintenance of quality control; and evaluation of teachers and students.

584-3 Curriculum Theory, Foundations, and Principles. The course will emphasize the study of the perspectives on curriculum theory that have guided the development of curriculum practice in the United States. Students will critically examine these perspectives and utilize them to develop and defend positions on contemporary curriculum issues.

585-1 to 15 (1 to 3 per semester) Topical Seminar. A graduate level seminar that involves the study of special problems and related research associated with practical educational situations. Problems available for critiquing and analyzing are the following: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early Childhood education, (i) Elementary education, (j) The Middle school, (k) Secondary education, (l) School library media, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, and (q) Family studies, (r) Computer based education, (s) Gifted and talented education, (t) Teacher education. Maximum of six hours toward a Master's degree. Prerequisite: consent of instructor.

586-3 Curriculum Design and Development. Presentations concerning educational planning and curricular decision-making relating to curriculum: aims, goals, and objectives; nature of knowledge, disciplines, and subjects; curriculum structures: sequence and scope; substantive structural models; content and activity selection, product analysis and production; evaluation; and curriculum modification and change.

587-3 Curriculum Implementation and Evaluation. Attention is given to preparing the curriculum specialist to use appropriate techniques and skills to put curriculum programs into practice and to assess the effectiveness of such programs in terms of a wide range of variables, which indicate success or need for curricular modification.

589-3 The Work of the Director of Curriculum and Instruction. The role of the director of curriculum and instruction is the focus of this course. Such topics as the background, current status, and tasks and functions of the position are examined. Additionally, such broad areas of the

director's role as needs assessment, program planning and evaluation, and in-service education planning are covered. Prerequisite: 586 or 587 or consent of instructor.

590-1 to 15 (1 to 3 per topic) Independent Readings. Directed readings in literature and research in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of four hours toward a Master's degree. Prerequisite: consent of instructor.

593-1 to 15 (1 to 3 per topic) Individual Research in Education. The selection, investigation and writing of a research topic under the personal supervision of a member of the departmental graduate staff, in one of the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational Technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. Maximum of three hours counted toward a Master's degree. Prerequisite: consent of instructor.

594-(2 to 9 per topic) Practicum. For Master's degree students: professional consultation, teaching demonstration, practical application of advanced theory, work with clinical cases, or program development implementation, and evaluation in school systems, community colleges, or universities. In addition, may involve reading and research directed to special problems involved in on-site situations. Practicum is available in the following areas: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j) Middle school, (k) Secondary education, (m) Instruction, (n) Educational technology, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A Maximum of nine hours credit may be applied toward a Master's degree. Prerequisite: consent of instructor.

595-(2 to 8 per topic) Internship. Culminating experience for Ph.D. or specialist degree students. Students engage in specialized service areas either in their own or a cooperating school or school system or university. Weekly on-campus or on-site seminar will be held with the intern supervisor. Internship areas are: (a) Curriculum, (b) Supervision for instructional improvement, (c) Language arts, (d) Science, (e) Mathematics, (f) Reading, (g) Social studies, (h) Early childhood, (i) Elementary education, (j)

Middle school, (k) Secondary education, (m) Instruction, (n) Educational media, (o) Environmental education, (p) Children's literature, (q) Family studies, (r) Computer based education, (s) Gifted and talented education, and (t) Teacher education. A maximum of eight hours credit may be applied toward a Ph.D. or specialist degree. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Prerequisite: admission to Master's degree program.

600-1 to 32 (1 to 12 per semester) Dissertation. Minimum of 24 hours for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

ECONOMICS

www.siu.edu/~econ/
econinfo@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Becci, Zsolt, Associate Professor, Ph.D., University of Wisconsin-Madison, 1991; 2003. Public Finance, macroeconomics.

Dai, Chifeng, Assistant Professor, Ph.D., University of Florida, 2003; 2005. Industrial organization, public economics, law and economics, and applied econometrics.

Färe, Rolf, Professor, *Emeritus*, Docent, University of Lund, Sweden, 1976; 1978.

Gilbert, Scott, Associate Professor, Ph.D., University of California-San Diego, 1996; 1999. Econometrics, applied macroeconomics.

Grabowski, Richard, Professor, Ph.D., University of Utah, 1977; 1979. Economic development, international economics.

Lahiri, Sajal, Professor and Vandever Chair of Economics, Ph.D., Indian Statistical Institute, 1976; 2002. International trade, developmental economics, environmental economics.

Laumas, G. S., Professor, *Emeritus*, Ph.D., Wayne State University, 1966; 1990.

Layer, Robert G., Professor, *Emeritus*, Ph.D., Harvard University, 1952; 1955.

Mitchell, Thomas M., Associate Professor, Ph.D., Brown University, 1984; 1983. Microeconomic theory; international trade.

Morshed, A.K.M. Mahbub, Associate Professor, Ph.D., University of Washington, 2001; 2004. Macroeconomic theory, International economics, economic growth.

Myers, John G., Professor, *Emeritus*, Ph.D., Columbia University, 1961; 1977.

Pitafi, Basharat, Assistant Professor, Ph.D., University of Hawaii, 2004; 2005. Public economics, resource economics.

Primont, Daniel, Professor, Ph.D., University of California, Santa Barbara, 1970; 1978. Microeconomic theory, mathematical economics, econometrics.

Sharma, Subhash C., Professor and *Interim Chair*, Ph.D., University of Kentucky, 1983; 1983. Econometrics, statistics.

Sylwester, Kevin, Associate Professor, Ph.D., University of Wisconsin-Madison, 1997; 1998. Macroeconomics, economic development.

Trescott, Paul B., Professor, *Emeritus*, Ph.D., Princeton University, 1954; 1976.

Watts, Alison, Associate Professor, Ph.D., Duke University, 1993; 2001. Microeconomics, game theory, industrial organization, law and economics.

 The Department of Economics offers graduate programs that lead to both master's and doctoral degrees. The master's degree is designed to be a twelve- to sixteen-month program in which the student takes courses in theory as well as an applied specialization. The doctoral program is built around a core of courses in microeconomics, macroeconomics and econometrics allows the student to specialize in two fields. The coursework towards the doctoral degree is expected to take three years and the writing of a dissertation one year.

Admission

The overall scholastic record and potential of the applicant for admission is more important than prior preparation in specific areas of economics. While undergraduate specialization in economics is desirable, the program is open to students whose undergraduate specialization has been in other fields. However, if a student has not taken intermediate level microeconomics, macroeconomics, and statistics, remedial work may be required before the student can take the required courses for the graduate degree.

Application is done online: www.gradschool.siu.edu/admissions.htm. Additional information about the graduate

programs in the Department of Economics is available online at www.economics.siu.edu.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for admissions to graduate study in economics. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

All applicants should take the aptitude portion of the Graduate Record Examination. Information on testing dates and places may be obtained from the website at www.ets.org or by writing to Educational Testing Service, Princeton, New Jersey 08540. Scores should be sent to Southern Illinois University Carbondale marked "Attention: Department of Economics." All exam scores must be received before admission.

Evaluations of applicants by the department are based on information from the application form, GRE scores, transcripts, and other information.

Applicants not admitted to the Department of Economics who meet the Graduate School requirements may register for remedial courses as nondeclared students. Such

persons may be considered for admission to the Department of Economics at a later date, based on their performance in such remedial courses. This option is not available for international students.

Foreign applicants whose native language is not English must take the Test of English as a Foreign Language (TOEFL) or any other equivalent test. The Department of Economics requires that the applicant achieve a 550 paper score or 220 computer score or above for admission to the graduate program. The TOEFL must be taken no more than 24 months prior to the date when admission is sought. For information concerning TOEFL testing dates and locations, check on line at www.ets.org or write to Educational Testing Service, Princeton, New Jersey 08540.

Entry into Ph.D. Program. A student with a master's degree must meet Graduate School admission requirements with a graduate grade point average of 3.25 ($A = 4.0$) or better. A student with a bachelor's degree must meet Graduate School admission requirements with an undergraduate grade point average of 2.7 or better. After meeting these requirements the bachelor's degree student will be initially admitted as a master's student. Upon passing the qualifying exam, taken after the first year of graduate study, the student will be given entry into the doctoral program. Application for entry should be made to the Graduate School website, www.gradschool.siu.edu.

Entry into the Master's Degree Program. The master's degree program is intended to serve as a terminal degree. A student with a bachelor's degree must meet Graduate School admissions requirements with a grade point average of 2.7. Application materials are available from the director of graduate studies in the Department of Economics.

Requirements for the Master's Degree

The master's degree prepares students for positions in government and business and for teaching at the junior college level. The general requirements for the Master's degree may be conveniently classified under two broad headings, course and hour requirements and research requirements.

Course and Hour Requirements. Those students who plan to receive the Master's degree as a terminal degree are required to have the following courses:

- Economics 465 Mathematical Economics I
- Economics 463 Applied Econometrics
- Economics 540a Microeconomic Theory I
- Economics 541a Macroeconomic Theory I

Each master's student must take at least one graduate director-approved, two-course specialization. In addition, each master's student must accumulate a minimum total of 30 graduate-level semester hours approved by the director of graduate studies. Of this minimum, 21 hours must be in Economics courses, excluding Economics 408, 440, 441, 443, 507, and 590, and 15 must be in 500-level courses.

Any student who earns six semester hours of C or below in Economics courses taken for graduate credit is subject to dismissal from the graduate program in economics. A minimum grade point average of 3.0 ($A=4.0$) in 400- and 500-level economics courses is required excluding Economics 408, 440, 441, 501 and 502. Only 400- and 500-level courses may count toward the master's degree. Graduate students in economics cannot take Economics 408, 440, 441, or 443 for credit toward a graduate degree in economics.

Research Requirements

A Master of Arts degree will be awarded upon completion of a Master's thesis, and the course and hour requirements. The thesis shall be supervised by a committee of at least three members of the graduate faculty and may be counted for 6 semester hours of credit as Economics 599. (Thus the thesis constitutes 6 of the required 30 semester hours.) You are required to submit your thesis electronically to the Graduate School. For electronic submission of your thesis, please go to <http://dissertations.umi.com/siu>. Here you will find a detailed frequently asked questions as well as information from UMI (University Microfilm International) regarding electronic submission requirements. One copy of this thesis is to be submitted to the Department of Economics prior to graduation.

A Master of Science degree will be awarded upon completion of a research paper and the course and hour requirements. The research paper is counted as three hours of credit as Economics 598. One copy is to be submitted to the Graduate School at least three weeks prior to the date of graduation, and one copy is to be submitted to the Department of Economics prior to graduation. Under this option, the student must take an additional graduate-level course for 3 semester hours.

Doctor of Philosophy Degree

The Ph.D. degree prepares students for teaching and research positions in the academic world, for positions such as senior economist in private industry and consulting firms, and for government positions requiring advanced economic training.

Course Requirements and Qualifying Exam. In the student's first year of graduate work he/she will be required to take the following courses:

- Economics 541a Macroeconomic Theory I
- Economics 541b Macroeconomic Theory II
- Economics 540a Microeconomic Theory I
- Economics 540b Microeconomic Theory II
- Economics 465 Mathematical Economics I
- Economics 511 Mathematical Economics II

At the end of the first year (June) the student will take qualifying examinations over in microeconomic theory and macroeconomic theory. A student will be allowed at most two attempts at passing each qualifying exam.

Fields of Specialization. A student is required to take two specialized fields in economics. In addition, the student is required to pass a written examination (after completion of the appropriate course work for credit) in one specialized field at the end of the second year. The Department of Economics offers the following fields of specialization: economic development, international economics, monetary theory and policy, applied microeconomics, advanced economic theory, and finance. A student will be allowed to take a field exam at most two times.

Other Required Courses. Students are required to pass the following courses:

- | | |
|------------------|--------------------------|
| • Economics 540c | Microeconomic Theory III |
| • Economics 541c | Macroeconomic Theory III |
| • Economics 567a | Econometrics I |
| • Economics 567b | Econometrics II |
| • Economics 567c | Econometrics III |

Courses (ECON)

416-3 Financial Economics. Study the role of money within financial system, and the role of the financial system itself in providing risk-sharing, liquidity and information services. An examination of the bond market, interest rates and the concepts of risk, liquidity, information costs, taxation and investment maturity. A detailed examination of financial markets, e.g. the markets for stocks, foreign exchange, and market for financial derivatives. Finally, a more detailed account of why and how financial institutions and instruments evolve. Prerequisite: 241 or consent of instructor.

419-3 Latin American Economic Development. Special attention to contemporary policy issues and alternative strategies for development. Among the topics included are inflation and financial reform, international trade and economic integration, foreign investment and agrarian reform. Prerequisite: 322 or 340 or 341 or consent of instructor.

429-3 International Trade and Finance. Analysis of the pattern and volume of world trade and capital flows; effects of trade and payments on the domestic economy; problems and methods of adjusting to change in the balance of payments. Prerequisite: 340 and 341 or consent of instructor.

431-3 Public Finance II. State and local. Analysis of the economic effects, problems and alternative solutions concerning state and local government expenditures, revenues and debt. Prerequisite: 330 or 340 or 341 or consent of instructor.

440-3 Price, Output and Allocation Theories. A systematic survey of theories of product prices, wage rates, rates of production and resource utilization under conditions of competition, monopolistic competition,

Dissertation

Upon successful completion of the coursework and passing of the qualifying and field examinations, a student will then be admitted to candidacy for the Ph.D. This will normally occur after the third year of work. Following this, the candidate, in consultation with his/her dissertation chairperson, will form a dissertation committee and develop a proposal. After the proposal is approved, the student must complete a dissertation based on original research and successfully defend the dissertation before the faculty.

You are required to submit your dissertation electronically to the Graduate School. For electronic submission of your dissertation, please go to <http://dissertations.umi.com/siu>. Here you will find a detailed frequently asked questions as well as information from UMI (University Microfilm International) regarding electronic submission requirements. One copy of this dissertation is to be submitted to the Department of Economics prior to graduation.

oligopoly and monopoly markets. Emphasis is on developing analytical tools useful in the social sciences. Not open to students who have had Economics 340. Prerequisite: 240 or consent of instructor.

441-3 Contemporary Macroeconomic Theory. An examination in the causes of inflation, unemployment, and fluctuations in aggregate economic activity, factors affecting consumption and investment, and the sources of economic growth. Emphasis is on understanding contemporary United States macroeconomic problems and the options for fiscal, monetary and income policies facing the United States government. Not open to students who have had 341. Prerequisite: 241 or consent of instructor.

450-3 History of Economic Thought. An analytical study of the development of economic ideas, with special reference to historical and societal context, central thrust and impact. Such benchmark figures as Smith, Marx, Marshall, Veblen and Keynes are highlighted and major schools of economic thought are identified. Prerequisite: 240 and 241 or 113 or consent of instructor.

463-3 Introduction to Applied Econometrics. Applications of statistical tools to specific economic problems. Numerous examples will be examined in order to achieve this goal. Emphasis will be given to model misspecification, non-classical estimation techniques, data analysis and simultaneous equations. Prerequisite: 408 or consent of instructor.

465-4 Mathematical Economics I. A systematic survey of mathematical economics. Application of basic mathematical tools to economic analysis, and a restatement of economic theory in mathematical terms. Prerequisite: 340 or 440 and Mathematics 140, or consent of instructor.

474-3 Antitrust and Regulation. The theory and practice of government policy toward imperfectly competitive markets. Includes such topics as merger policy, unfair trade practices, regulation of natural monopolies, peak load pricing, safety and environmental regulation, and consumer protection. Prerequisite: 340 or 374.

479-3 Problems in Business and Economics. Application of economic theory and tools of analysis to practical business problems. Cost and demand functions, and forecasting are analyzed from a policy standpoint. Prerequisite: 240, 308 or consent of instructor.

500-3 to 24 (3 per topic) Economics Seminar. A study of a common, general topic in the field of economics with individual reports on special topics. Prerequisite: consent of instructor.

501-1 to 21 Economics Readings. Readings from books and periodicals in economics. Master's degree students limited to a total of six hours. Prerequisite: consent of instructor and chair.

502-1 to 4 Readings in Resource Economics. (See Forestry 590.)

507-1 to 4 (1,1,1,1) Practicum in Undergraduate Teaching. Emphasizes teaching methods, source materials, and preparation of classroom materials. All teaching assistants must enroll. One hour of credit per semester. Graded S/U only.

510-2 Research in Economics: Design, Methodology and Presentation. Systematic approach to economic research. Includes research planning and design, exploration of the various sources of data and most frequently used methodology. The last part of the course is concentrated on techniques for communicating the results of research. Prerequisite: consent of instructor.

511-3 Advanced Mathematical Economics. A continuation of topics in 465 with more emphasis on proofs. Topics include economic applications of integration, differential equations and real analysis. Prerequisite: 465 or consent of the instructor.

517-3 Monetary Theory and Policy. A survey of contemporary monetary theory and related policy issues. Prerequisite: 541 or consent of instructor.

518-3 Monetary Theory and Policy II. Contemporary topics in monetary theory and policy, including analysis of the roles of money in inflation and economic growth, and an appraisal of the conduct and impact of monetary policy. Prerequisite: 517 or consent of instructor.

520-6 (3,3) Economic Development Theory and Policy. (a) Classical, neoclassical, and modern contributions to the theory of development; theories of underdevelopment. (b) Basic approaches to economic development; laissez-faire; balanced growth; unbalanced growth, role of government; methods of planning; and foreign aid. Must be taken in a,b, sequence. Prerequisite: (a) Restricted to consent of instructor, (b) 465 and 540A or their equivalent or consent of instructor.

530-3 Foreign Trade. Emphasis on the advanced theory of international trade, survey of significant literature in

international theory. Study of more advanced tools of analysis. Prerequisite: 540 or its equivalent or consent of instructor.

531-3 International Finance. Application of theory to current international economic developments. Empirical studies. Prerequisite: 429 and [340 or 440] and [341 or 441] or consent of the instructor.

533-3 Public Finance Theory and Practice. Historical development of public finance theories with analysis of their policy implications. Prerequisite: 330 or consent of instructor.

534-3 Economics of Taxation. This course examines from a theoretical and applied point-of-view, various economic aspects of taxation. Other government revenue sources may also be analyzed such as inter-governmental grants and debt. Emphasis is on application of microeconomic theory to problems in taxation. Usual topics include: equity in taxation, shifting and incidence of taxes, excess burden of taxes, other economic effects of taxes, tax reform, debt. Prerequisite: 330 and 340, or 440, or consent of instructor.

540A-3 Microeconomic Theory I. The course provides the basic theoretical knowledge necessary for microeconomic research in business and government. Prerequisite: 340 or 440 or consent of instructor.

540B-3 Microeconomic Theory II. A contemporary course in partial equilibrium analysis. Topics include the theory of the firm, market structure and the theory of the consumer. The course frequently takes an axiomatic approach; consequently there are many formal statements and proofs of theorems. Prerequisite: 4465 and 540A or consent of instructor.

540C-3 Microeconomic Theory III. A contemporary course in game theory as applied to economics. Topics include static games of complete and incomplete information with applications to Cournot oligopoly, tragedy of the commons, and auctions; as well as dynamic games of complete and incomplete information with applications to Stackelberg oligopoly, sequential bargaining, imperfect international competition, and job market signaling. Prerequisites: 540A and 540B or consent of instructor.

541A-3 Macroeconomic Theory I. The Rigorous development of general equilibrium macroeconomic models to analyze the determination of national income in the context of Classical, Keynesian, Neoclassical and Monetarist economic systems. Also included is the study of key sectoral demand functions. Prerequisite: 341 or 441 or consent of instructor.

541B-3 Macroeconomic Theory II. Continuation of 541A. Analyzes the ideas of New Classical and New Keynesians on the determination of national income. Focuses on the impact of rational expectations and the natural rate hypotheses on the effectiveness of macroeconomic policy. Also included are recent developments in the area of business cycles. Prerequisite: 541a.

541C-3 Macroeconomic Theory III. Recent developments and major issues in contemporary macroeconomic theory.

Focuses on incorporating uncertainty, stochastic tools and dynamic analysis into macroeconomic theory. Prerequisite: 541b.

542-6 (3,3) Industrial Organization. (a) Industrial organization I. A study of the variety of forms of competition among firms. Topics include theories of the firm, oligopoly theory, theories of entry, product differentiation and innovation. Prerequisite: 440 and 441. (b) Industrial organization II. A survey of government policy toward industry. Topics include antitrust: mergers, concentration and unfair trade practices, regulation of public utilities, peak load pricing, product, safety and environmental regulation. Prerequisite: 440 and 441.

545-3 Resource Economics. A survey of theoretical and institutional aspects of energy production, distribution, consumption and regulation. Topics covered include cartel theory, history of energy use, theory of resource exhaustion, models of energy demand and supply, past and current policy issues, and environmental protection. Prerequisite: 467 and 440, or consent of instructor.

546-3 Workshop in Resource Economics. A research seminar on topics related to energy production, distribution, consumption and regulation. Meetings will be divided among presentations of research of (a) faculty, (b) students, and (c) outside speakers, offered every semester. Maximum of three hours toward Master's degree in economics. Prerequisite: 545.

552-3 Seminar in Economic Thought. An exploration of the basic philosophic assumptions which underlie the various types of economic thought with special emphasis upon the historical development of the premises of modern day economic theories. Prerequisite: 450a or 450b or consent of instructor.

566-3 Mathematical Economics II. Linear economic models. Linear programming. Input-output analysis and general equilibrium models. Prerequisite: 340 or 440 or 465 or consent of instructor.

567A-3 Econometrics I. Topics include distribution theory, statistical inference, hypothesis testing and classical linear multiple regression. The emphasis is on both theory and application. Prerequisite: 465 or consent of instructor.

567B-3 Econometrics II. Further topics in the theory and application of single equation econometric models including model specification, data problems, large sample results, non spherical disturbances, heteroscedasticity, autocorrelation and time series analysis. Prerequisite: 567a or consent of instructor.

567C-3 Econometrics III. Topics will include systems of regression equations and simultaneous equation models. Additional topics will be selected by the instructor from the following: models with discrete dependent variables, limited dependent variable model, nonlinear regression model, nonlinear optimization and estimation of stochastic equilibrium models. Prerequisite: 567b or consent of instructor.

570-3 Seminar in Contemporary Microeconomic Theory. An investigation of recent developments and

current controversies in economic theory with emphasis on microeconomic problems. Prerequisite: 540b.

571-3 Seminar in Contemporary Macroeconomic Theory. An investigation of recent developments and current controversies in economic theory with emphasis on macroeconomic problems. Prerequisite: 541b or consent of instructor.

575A-3 Econometric Theory I. Topics include: probability theory; asymptotic theory; linear regression; likelihood ratio, Lagrange multiplier, and Wald tests; stochastic processes; ARIMA models; unit root tests, cointegration, spurious regression, and spurious trend; ARCH models; VAR models; and other topics to be determined by the instructor. Prerequisite: 567b or consent of instructor.

575B-3 Econometric Theory II. Topics include: density estimation methods, nonparametric regression, stochastic frontiers, nonlinear regression models, nonlinear time series models, information matrix tests, generalized method of moments, nonnested hypothesis testing, Bayesian methods, bootstrapping, and other topics to be determined by the instructor. Prerequisite: 575a or consent of instructor.

580A-3 Performance Measurement. Analysis of measurement of efficiency and productivity using frontier techniques. Focuses on theoretical and empirical specification of production frontiers and the evaluation of performance relative to those frontiers. Duality theory is exploited to investigate performance in various economic environments. Prerequisite: 540a and 465, or consent of instructor.

580B-3 Welfare Measurement. A study of the theory and methods of constructing economic measures of price, quantity and other welfare indicators. Prerequisite: 540a, 540b and 465 or consent of instructor.

590-1 to 8 (1 per semester) Seminar in Contemporary Economics. Presentation and discussion of current research in economics. One hour credit per semester. Graded *S/U* only.

598-1 to 3 Research Paper. Preparation of a research paper for a Master's degree. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of four hours to be counted toward a Master's degree. Graded *S/U* only.

600-1 to 36 (1 to 16 per semester) Doctoral Dissertation. Hours and credit to be arranged by director of graduate studies. Graded *S/U* only.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

DOCTORAL PROGRAM IN EDUCATION

COLLEGE OF EDUCATION AND HUMAN SERVICES

Faculty in the concentrations listed below participate in this program. Refer to specific concentrations elsewhere in the catalog.

One may pursue a program of study leading to the Doctor of Philosophy degree in education through any of the five approved concentrations: curriculum and instruction, educational administration, educational psychology counselor education, educational measurement and statistics, and special education), health education, and workforce education and development.

Students must satisfy the requirements of the Graduate School in addition to the College of Education and Human Services' requirements for the Doctor of Philosophy degree in education. General policies pertaining to the Doctor of Philosophy degree in education are enumerated in this section; policies specific to each concentration may be obtained from the appropriate department chair.

For program descriptions of Master of Science in Education degrees, the student should review the material listed in this publication in the appropriate departmental section or consult the appropriate department.

Application

Applicants must submit the standard application materials to the department into which they wish to gain admission. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Education. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. Additional data may be requested by the faculty of the specific concentration. The student is encouraged to contact the appropriate departmental executive officer for specific guidelines.

Admission and Retention

The appropriate department reviews all documents relative to the student and makes a recommendation to the dean of the College of Education and Human Services who makes the final admission recommendation to the Graduate School. Retention standards beyond minimum Graduate School standards are established by each concentration and are available from the departmental executive officer of the appropriate department.

Advisement

For each student a doctoral committee consisting of a minimum of five members is constituted and approved according to procedures described in the *Ph.D. Policies and Procedures Manual of the College of Education and*

Human Services. Copies of the manual can be obtained from the dean of the College of Education and Human Services. The doctoral committee also serves as the student's dissertation committee.

The program, planned to include all graduate study beyond the master's degree, should be approved at a meeting of the student's committee. The program is then forwarded to the dean of the College of Education and Human Services for final approval and filing.

Program Requirements

Core Classes. Each doctoral student in education must successfully complete a prescribed core of three semester hours in Introduction to Doctoral Studies in Education (EDUC 510) and three semester hours in either Philosophical and Cultural Foundations of Education (EDUC 511) or Behavioral and Cognitive Foundations of Education (EDUC 512). For each concentration there are also basic and advanced courses which should be completed prior to the student taking the preliminary examination. Information about these specific courses can be obtained from the appropriate graduate program coordinator.

Research Tool Classes. The Ph.D. degree in education is a research-oriented degree. Each doctoral student in education must successfully complete a core of Introduction to Doctoral Studies in Education (EDUC 510) and three semester hours of Introduction to Qualitative Methods (EAHE 587) and three semester hours of Introduction to Quantitative Methods (EPSY 505). In addition, each student must complete a minimum of one other three credit class on research methods (also referred to as "research tool"). A list of approved research tool classes for the Ph.D. degree in education is available in the *Ph.D. Policies and Procedures Manual of the College of Education and Human Services*.

Concentration Classes. Each doctoral student in education must successfully complete a prescribed core of semester hours in their concentration, the number of which varies by concentration. Concentration classes must be completed before the preliminary exam. See the specific department for the concentration class requirements.

Preliminary Examination. All students in the Ph.D. program in education must take the preliminary examination over areas determined by the student's doctoral committee. In addition, the examination may cover areas specific to a concentration. The examination is offered three times a year: Wednesday, Thursday, and Friday of the fifth week of each term.

A student may petition the doctoral committee for permission to take the preliminary examination after successful completion of the research requirement, successful completion of all or most of the course work, and successful completion of the doctoral seminar sequence in education. A student who fails the examination on the initial attempt may take the examination two additional times. If at that time the student has not passed the examination, the student is dropped from the program.

Admission to Candidacy. A student may be advanced to candidacy after the student has completed the 2 doctoral seminars, EDUC 590 and 591, fulfilled the residency requirements for the doctoral degree (see degree requirement in Chapter 1), met the research tool requirement, and passed the preliminary examination. The doctoral committee chair should initiate the admission to candidacy forms and forward the forms to the dean of the College of Education and Human Services. Admission to candidacy is granted by the dean of the Graduate School upon the recommendation of the dean of the College of Education and Human Services. The doctoral degree may not be conferred less than six months after admission to

candidacy, except upon approval of the dean of the Graduate School.

Dissertation. The doctoral committee consists of a chair who is authorized to direct doctoral dissertations and at least 4 others who are authorized to serve on doctoral committees. The committee is appointed by the dean of the Graduate School upon the recommendation of the dean of the College of Education and Human Services. At least one member of the committee must be from a department other than that of the student and at least one member from a unit outside the College of Education and Human Services.

In choosing a topic for the dissertation, the candidate should prepare a prospectus for the dissertation and submit the prospectus to the doctoral committee for approval. After the doctoral committee approves the prospectus, the chair of the committee files one copy of the approved prospectus in the office of the dean of the College of Education and Human Services.

Satisfactory completion of the dissertation requirement includes the passing of an oral examination covering the dissertation and related areas

Courses (EDUC)

460-3 (1,1,1) Conflict Resolution: Prevention and Intervention Strategies. Preventive interventions for teachers, administrators and related school personnel to teach students strategies for interrupting or decreasing violence in schools and classrooms will be covered in each section of the course. Those taking the course will gain knowledge and skills needed to help students learn anger management skills, consequently equipping them with alternatives to resorting to violence or other destructive behavior. Specific violence prevention interventions will be covered in the following areas: (a) anger management, (b) peer mediation, (c) bullying.

501-1 to 12 Graduate Student Teaching. A requirement for the Master of Arts in Teaching and Alternative Route to Teacher Certification programs. The student teaching experience is necessary for certification by entitlement. Prerequisite: admission to the M.A.T. or alternative route to teacher certification programs. Lab Fee: \$100.

510-3 Introduction to Doctoral Studies in Education. This seminar is required of all new students enrolled in the Ph.D. program in Education. It will serve as an introduction to doctoral studies and doctoral-level scholarship in Education and will emphasize each student's development as a critically reflexive scholar and address the attitudes, assumptions and practices that underlie scholarly inquiry. Restricted to: Admission to the PHD program.

511-3 Doctoral Seminar in Philosophical & Cultural Foundations of Education. This seminar is one of two courses options for all students pursuing a doctoral program degree in the College of Education and Human

Services. The primary objectives are to aid in the development of the Doctoral student's own nature and reflective theory of education; to help students pursue their scholarly activities in relation to the whole field of education; and to make the student aware of the resources of scholarship in other disciplines which might be said to be foundational to education. Restricted to: admission to the Ph.D. program in education.

512-3 Doctoral Seminar in Behavioral and Cognitive Foundations of Education. This seminar is one of two courses options for all students pursuing a doctoral program degree in the College of Education and Human Services. The primary objectives are to aid the student in describing the attitudes, assumptions and practices which underlie empirical inquiry; to help the student to recognize the strengths and weaknesses of the various types of research in terms of methodology employed; and to aid the student in identifying and refining a research question and constructing a research design appropriate to answer the research question. Restricted to: admission to the Ph.D. program in education.

550-1 to 10 Experimental Education. Offered for purposes of testing new and experimental courses and series of courses within the College of Education. Prerequisite: consent of instructor.

EDUCATIONAL ADMINISTRATION

www.web.coehs.siu.edu/units/EAHE/
debdauid@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Buser, Robert L., Professor, *Emeritus*, Ed.D., Indiana University, 1966; 1967.

Carlson, Cameron B., Assistant Professor, Ed.D., Wichita State University, 2007; 2010. Educational Leadership.

Dennis, Lawrence J., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1968; 1968.

Eaton, William E., Professor, *Emeritus*, Ph.D., Washington University, 1971; 1971.

Green, Judith A., Associate Professor, Ph.D., Purdue University, 1990; 2005. School leadership.

Evans, Andrea E., Associate Professor and *Chair*, Ph.D., University of Illinois at Chicago, 2004; 2010. Educational Administration.

Evans, John, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1968; 1970.

Goldman, Samuel, Professor, *Emeritus*, Ph.D., University of Chicago, 1961; 1980.

Hytten, Kathy, Professor, Ph.D., University of North Carolina at Chapel Hill, 1996; 1996. Philosophy of education, cultural studies.

Lewin, Elizabeth, Assistant Professor, Ph.D., University of Sarasota, 1997; 2003.

McKerrow, K. Kelly, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1986; 1994.

Sharp, William, Professor, *Emeritus*, Ph.D., Northwestern University, 1978; 1991.

Verduin, John R., Jr., Professor, *Emeritus*, Ph.D., Michigan State University, 1962; 1967.

The Department of Educational Administration and Higher Education offers an approved major in educational administration leading to the Master of Science in Education degree. It also provides courses and instructional personnel for doctoral students who wish to concentrate in educational administration at the doctoral level. All degrees are NCATE approved. Interested applicants should direct inquiries to the admissions clerk of the department.

The Department of Educational Administration and Higher Education works cooperatively with the departments of Curriculum and Instruction, Educational Psychology and Special Education, and Workforce Education and Development in administering the State of Illinois General Administrative Certificate for persons seeking positions as principals or directors of special education or vocational education. A master's degree and two years of public school teaching (or its equivalent), are required for the certificate. Students must make application for the administrative certification program through the department.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Educational Administration. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Science in Education Degree

At the master's level, a concentration in educational administration is offered.

The Master of Science in Education degree in educational administration is a cohort program, with admissions once a year. The deadline for applications is in February and coursework for each cohort begins in the summer. The program includes a 36 semester hour core consisting of:

- EAHE 501-3 Educational Administration: Tasks and Processes
- EAHE 503-3 Introduction to Theory
- EAHE 509-3 School-Community Relations and Development
- EAHE 511-3 Information Management: Curriculum and Technology
- EAHE 519-3 Illinois School Law
- EAHE 520-3 Current Issues in Educational Administration
- EAHE 523-3 School Finance and Facilities
- EAHE 538-3 Education and Social Forces
- EAHE 547-3 Evaluating Educational Research
- EAHE 595a, b, or c-3 Elementary, Middle, or Secondary School Internship
- Two Principalship Courses (e.g. EAHE 504-3 Adm. and Supervision of the Elementary School, EAHE 505-3 Adm. and Supervision of the Middle School, EAHE 506-3 Adm. and Supervision of the Secondary School)

Curriculum course (e.g. EAHE 511-3 Information Management: Curriculum and Technology)

Social Foundations course (e.g. EAHE 536, 538, 540, 542, or 544)

School of Law course (e.g. 519); and EAHE 595-3 a.) Elementary School Internship; b.) Middle School Internship; or c.) Secondary School Internship.

Students have the option of enrolling in EAHE 593-3 (Individual Research) or EAHE 599-3 (Thesis) and writing a research paper or a thesis in lieu of EAHE 547.

Master of Science in Education Degree/J.D. in Law

A concurrent degree in educational administration and law is designed to enhance students' knowledge of the increasingly litigious areas of education law. Specifically, the program is designed to educate practitioners in law and educational administration to effectively utilize the problem-solving strategies and techniques of both disciplines. Students prepared in this program will develop and understanding of the ethics, language, research, history, and processes of both professions. Individuals so trained will be uniquely prepared for careers that combine both legal and educational needs, such as K-12 administration, public policy leadership roles, and student or employee advocate. In addition, strengthening the academic training of lawyers and school administrators will enhance the quality of research performed in both disciplines, as well as enhance the quality of publications in both fields of study. Students with this joint degree will be uniquely prepared to address the myriad of problems in our society that present complex legal and educational issues. Students who complete this program will have enhanced educational and professional opportunities both inside and outside academia. Students must meet the requirements of admission and be admitted separately to the Educational

Administration program and the School of Law. Students currently enrolled in the educational administration or law programs must have a minimum GPA before they may enroll in the concurrent program. The minimum GPA for education administration is 3.0 and for law is 2.5. Educational Administration students interested in this program should consult with the Educational Administration Graduate Program Director.

Doctor of Philosophy Degree in Education

The Department of Educational Administration and Higher Education participates in the doctoral program in education with an approved concentration in educational administration. See the description of the Ph.D. degree in education. The Department also administers a cooperative doctoral program with SIUE.

Inquiries regarding application to their programs should be directed to the admissions clerk of the Department of Educational Administration and Higher Education.

Certificate in Conflict Resolution

The Department of Educational Administration and Higher Education participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers EAHE 543 and EAHE 591 as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses (EAHE)

402-1 to 3 Principles of Student Personnel Group Work. Acquaints the student with group work possibilities and functions in higher education.

470-3 College Student Sexuality. (Same as WMST 470) Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality..

500-3 Educational Research Methods. Introduction to educational research and the variant methodologies used in conducting studies within institutional settings. Both quantitative and qualitative approaches will be examined.

501-3 Educational Administration: Tasks and Processes. An examination of the administrative tasks and processes dealing with interaction within the school organization and between the organization and its environment. Components will be viewed for their essential inter relatedness as well as their unique aspects. Emphasis

will be placed upon the processes by which change is brought about in dealing with decision making, programming, communication, motivating, controlling and evaluating.

503-3 Educational Administration: Introduction to Theory. Examination of the various administrative tasks in light of established organizational models and leadership theories. The student will be introduced to a variety of theories, models, and concepts that have pertinence to the field of educational administration. Emphasis will be placed upon the methods of theory construction and the development of a theoretical orientation to the solution of administrative problems. The course draws heavily upon research done in the behavioral sciences.

504-3 The Administration and Supervision of the Elementary School. A critical study of research and writing with implications for the elementary principalship. Designed to meet many of the particular needs of persons interested in becoming elementary principals. Other persons such as teachers, superintendents and staff personnel will gain insight into problems and responsibilities of the elementary principal's role.

505-3 The Administration and Supervision of the Middle School. Reviews the philosophy of the middle school concept and emphasizes the role of the principal in the areas of management, supervision of human resources, program development, the direction of students and the concern for ethical standards of operation.

506-3 The Administration and Supervision of the Secondary School. Deals with problems met specifically by the high school principal. Emphasizes the principal's role in relation to guidance, curriculum, schedule-making, extra-curricular activities, public relations, budgeting of time, etc.

508-3 Student Development Theories. A study of the major theories of human development as applied to college students with implications for the student affairs specialist.

509-3 School-Community Relations and Development. Practical and theoretical aspects of public relations as applied in general and as applied specifically to educational institutions and efforts. Involved are the practical and theoretical considerations of educational institutions assisting in the further development of the community or communities in which they find themselves.

510-3 Higher Education in the United States. An overview of American higher education in historical and sociological perspectives: its development, scope, characteristics, issues, problems, trends and criticism.

511-3 Information Management: Curriculum and Technology. The course seeks to provide relevant information to students in the area of curriculum for the elementary, middle school and high school. Course content includes topics and student projects which illustrate the principles and practices of effective curriculum administration; the leadership principles required for curriculum change; and the planning skills necessary for the development of technology plans.

513-3 Organization and Administration in Higher Education. Theories and practices in governance of various types of higher education institutions with attention to problems of formal and informal structures, personnel policies, decision making, institutional self-study and societal-governmental relations.

514-3 Case Studies in Higher Education. This course is designed to allow graduate students studying to be administrators in higher education practice at analyzing problems and issues in postsecondary education, as well as problems and issues facing college students. Extended, semester-long-case studies are utilized. Prerequisite: EAHE 508 or consent of instructor.

515-3 Student Affairs Administration. Study of organization, functions, and under girding principles and policies of student development and the related student personnel services and programs in contemporary colleges and universities including community colleges.

516-3 College Students and College Cultures. Study of the nature of students, the impact of the college on student development, and the nature of the college as a unique

social institution. Study of student subcultures and the interaction between students, institutions, and communities.

517-3 The Legal Framework of Education. A study of administrative, judicial, statutory and constitutional laws which have application in American public schools.

518-3 College Teaching. Emphasis is given to teaching and learning styles, the teaching-learning process, specific methods of teaching, strategies to improve teaching, resources available to the classroom teacher, and methods of evaluating teaching. Other topics will include: models of effective teaching behavior, academic freedom and due process. Course also open to teaching assistants from other departments.

519-3 Illinois School Law. A study of administrative, judicial, statutory, and constitutional laws which have application in the Illinois public schools.

520-1 to 12 Current Issues in Educational Administration. An examination of current issues that affect the various administrative levels in educational systems. The issue selected receives intensive treatment and review. Depending upon the semester (check with the department) this class is offered either specifically for those seeking Type 75 principalship certification or specifically for those seeking the superintendent's endorsement.

523-3 Introduction to School Finance and Facilities. The function of the principal and supervisor in the improvement of instruction and in curriculum development. Activities, methods and devices for improving the effectiveness of instruction stressed. Prerequisite: 511 or consent of instructor.

524-3 Curriculum Design and Policy. A study of assumptions, materials, methods and evaluation in the designs of various curricula in colleges and universities, with attention to curriculum resources and policy.

525-3 Equity and Diversity in Higher Education. This course is designed to educate students in two ways: by broadening understanding and deepening readings into diverse higher education populations and issues, and by applying those understandings and readings to their practices as postsecondary administrators and educators.

526-3 The Community College. A study of the characteristics and functions of the community or junior college in American higher education. Course content aids the student in developing a general understanding of the philosophy, objectives, organization, and operations of this significant institution.

528-3 Finance in Higher Education. A study of financing higher education in American society and related economic aspects. Emphasis is given to sources of funds and management of financing in colleges and universities including budgeting, control, accountability and current trends.

530-3 Historical Research in Education. Seminar designed to explore the literature, methods and possibilities of historical research in education.

535-1 to 14 (1 to 3 each) Higher Education Seminar I. A series of seminars for specialized study of areas of administrative practice and policy. (a) Student organization and activities advising, (b) Law and higher education, (c) Student financial assistance, (d) Admissions and records, (e) Academic and faculty administration, (f) Current issues in student affairs, (g) Housing administration, (h) Non-traditional students, (i) Gender in higher education (same as WMST 535), (j) Student union administration, (k) Special topic.

536-3 History of Education in the United States. An historical study of the problems of American education.

537-3 The Adult Learner. The focus of study will be adult learners, their motivations, learning styles, needs, goals, life stages, life cycles and developmental patterns. Implications for adult learning will be sought.

538-3 Education and Social Forces. A study of the social forces that shape educational policies in the United States.

540-3 Classics in Education. Primary attention will be given to Plato's *Republic*, Castiglione's *Courtier*, Rousseau's *Emile*, and Dewey's *Experience and Education*. Other authors such as Aristotle, Quintilian, Francis Bacon, Montaigne, John Bunyan, Benjamin Franklin, A. S. Neill, Karl Marx, and B. F. Skinner will receive additional consideration.

542-3 Contrasting Philosophies of Education. An examination of current educational problems and trends in the light of contrasting philosophies of education.

543-3 Professional Negotiations. An investigation of the theory and practice of professional negotiations. Emphasis will be placed on understanding the roles of adversarial negotiations. Use will be made of cases and simulations.

544-3 Education and Culture. A study of the concept of culture and its relation to the process of education.

545-1 to 16 (a through j, 1 to 3 each; s, 1 to 8) Higher Education Seminar II. A series of seminars for scholarly inquiry into significant aspects of higher education. (a) Community college administration, (b) Federal initiatives in higher education, (c) Institutional policy research, (d) Current issues in higher education, (e) Higher education administration, (f) Institutional finance and administration, (g) History of higher education, (h) Sociology of higher education, (j) Adult and continuing education, (s) Selected topic.

547-3 Evaluating Educational Research. The goal of this course is to develop student skills as consumers of research in education. Standards and practices in multiple traditions of educational research are reviewed in order to help students critically read, assess, and evaluate research.

550-3 School Business Administration. A study of the principles and practices governing management of business affairs of a public school system. Included are such topics as revenues, expenditures, accounting, auditing, reporting and applications of electronic data processing as a management tool. Practical experience is

given in using the Illinois financial accounting manual as well as other managerial procedures. Detailed study is made of the role of the school business administrator in the local school district.

551-3 Policy and Politics in American Education Systems. An examination of the political setting of educational administration and a general study of public policy in the American educational system. This course is open to students in certification and doctoral programs only. In addition to educational leadership related to the politics and policy of education, emphasis is given to innovative and contemporary practices of school administration.

553-3 Planning Processes and Policy Development. Surveys issues involved with accountability in education. Explores in some detail various planning models. Examines concepts and strategies in public policy development.

554-3 Seminar in Philosophy of Education. An interpretation of modern educational problems and trends in the light of basic philosophical viewpoints. Excerpts from the leading philosophical writings are used.

555-3 Leadership and Change in Education Organizations. An advanced seminar devoted to the study of leadership and change in the administration of complex education organizations. Particular emphasis is placed on organizations as social units that pursue specific goals, which they are structured to serve. Leadership and change is examined in terms of how they can influence organizational goals, organizational structure and organizations and the social environment.

556-3 The School Superintendent and Board of Education. Focuses on superintendent-school board relationships. It investigates the administrative team's role and functions as they relate to leadership in educational policy making.

557-3 Program Development and Evaluation. This course is designed to enable an administrator to develop, implement, and evaluate a school or agency program from inception through final assessment. An emphasis will be placed upon formal and informal means of formative and summative processes utilizing evaluation diagnostics and instrumentation. Formalized accreditation standards and guidelines will also be examined.

558-3 Personnel Evaluation and Administration. This course will provide the administrator with the concepts, strategies and assessment measures to evaluate and manage personnel in both simple and complex organizational settings.

564-3 Seminar in Ethics and Social Justice in Education. The goals of this course are to provide educational leaders with a framework for understanding the dynamics of oppression, to offer tools for ethical decision making, and to increase awareness and responsibility toward social justice issues in education.

575-3 Women in Higher Education. The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy.

585-3 Survey Research Methodology. A detailed examination of the methodology of survey research in the social sciences. In addition to the historical and philosophical foundations of social research, the techniques of developing indicators, sample selection, questionnaire construction and data collection by mail, telephone or personal interview will be outlined and practiced. Considerable attention will be directed towards the analysis of survey data using the university mainframe computer and statistical software. Prerequisite: 500 and Educational Psychology 506 (or equivalent) or permission of instructor.

587-3 Introduction to Qualitative Research. An advanced seminar dealing with the foundations, design, application, and implementation of the naturalistic or qualitative method of conducting research. The student is expected to develop a dissertation prospectus or an original research report using the naturalistic method of inquiry. Prerequisite: Doctoral standing or consent of instructor.

588-3 to 6 General Graduate Seminar. Selected topics or problems in cultural foundations of education. Prerequisite: advanced standing and consent of instructor.

589-1 to 3 Doctoral Research Seminar. Limited to doctoral students formulating and preparing research designs for investigation and implementation. Graded *S/U* only. Prerequisite: consent of instructor.

590-1 to 6 Readings. Advanced reading in one of the following areas. (a) Administration, (b) Buildings, (c) Supervision of curriculum, (d) Finance, (e) School law, (f) Supervision, (g) Comparative education, (h) History of education, (i) Philosophy of education, (j) Sociology of education, (k) Adult and community education, (l) Higher education. Prerequisite: consent of instructor. Graded *S/U* only.

591-1 to 6 Individual Study. Individual inquiry into selected problems or special topics in higher education under supervision of a graduate faculty member. Graded *S/U* only. Prerequisite: consent of instructor.

593-1 to 3 per topic Individual Research. Maximum of six hours toward master's degree. Selection, investigation and writing of a research assignment under the personal

supervision of a graduate faculty member in one of the following areas. (a) Administration, (b) Buildings, (c) Supervision of curriculum, (d) Finance, (e) School law, (f) Supervision, (g) Comparative education, (h) History of education, (i) Philosophy of education, (j) Sociology of education, (k) Adult and community education, (l) Higher education. Graded *S/U* only. Prerequisite: consent of instructor.

594-3 Advanced Qualitative Research. A doctoral seminar in qualitative research, including advanced data analysis, theory, methods and writing. Students will be expected to share examples from their own research-in-progress. This course is appropriate for students who are writing, or planning to write, a qualitative dissertation. Prerequisite: 587.

595-1 to 8 Internship in Educational Administration. (a) Elementary School Internship. (b) Middle School Internship. (c) Secondary School Internship. The internship requires placement in a K-12 school setting. Students seeking State of Illinois Level II Administrative Endorsement will be placed under the supervision of a certified principal or director. Students seeking experience at the pre-school and elementary level should enroll in 595a. The middle school setting is covered in 595b and the high school setting in 595c. Students must check with internship coordinators prior to registration.

597-1 to 6 Superintendent Internship. An internship conducted in a central administrative setting for fulfillment of the state of Illinois' Level III Administrative Certificate. Consent of student's adviser is required.

598-1 to 8 Internship in Higher Education. The internship requires placement in a higher education work setting. Supervision is provided by the cooperating teacher/administrator and the degree program coordinator. Students must check with program coordinators prior to registration.

599-1 to 6 Thesis.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

EDUCATIONAL PSYCHOLOGY

www.epse.siu.edu/epse@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Asner-Self, Kimberly K., Associate Professor, Ed.D., George Washington University, 1999; 1999.
 Bardo, Harold R., Associate Professor, Ph.D., Southern Illinois University Carbondale, 1972; 1968.
 Beggs, Donald L., Professor, *Emeritus*, Ph.D., University of Iowa, 1966; 1966.
 Bradley, Richard W., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1968; 1968.
 Brown, Beverly M., Professor, *Emerita*, Ph.D., University of Iowa, 1974; 1974.
 Champe, Julia, Assistant Professor, Ph.D., Idaho State University, 2004; 2008.
 Cody, John J., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1961; 1965.
 Deichmann, John W., Associate Professor, *Emeritus*, Ph.D., St. Louis University, 1969; 1969.
 Dillon, Ronna, Professor, *Emerita*, Ph.D., University of California, Riverside, 1978; 1978.
 Elmore, Patricia B., Professor, *Emerita* Ph.D., Southern Illinois University Carbondale, 1970; 1967.
 Headrick, Todd C., Associate Professor, Ph.D., Wayne State University, 1997; 1999.
 Kimemia, V. Muthoni, Assistant Professor, Ph.D., University of Central Florida, 2006; 2008.
 Kowalchuk, Rhonda K., Associate Professor, Ph.D., University of Manitoba, 2000; 2004.

Leitner, Dennis W., Associate Professor, *Emeritus*, Ph.D., University of Maryland, 1975; 1974.
 Lewis, Ernest, Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1971; 1970.
 May, Michael, Assistant Professor, Ph.D., Vanderbilt University, 2007; 2007.
 Mouw, John T., Professor, *Emeritus*, Ed.D., University of South Dakota, 1968; 1968.
 Pohlmann, John T., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1972; 1971.
 Prichard, Karen K., Associate Professor, *Emerita*, Ph.D., Kent State University, 1980; 1980.
 Sheng, Yanyan, Associate Professor, Ph.D., University of Missouri - Columbia, 2005; 2005.
 Snowman, Jack, Professor, *Emeritus*, Ph.D., Indiana University, 1975; 1975.
 Stinchfield, Tracy A., Assistant Professor, Ed.D., Duquesne University, 2002; 2005.
 White, Gordon W., Assistant Professor, *Emeritus*, Ph.D., University of Iowa, 1969; 1971.
 White, Lyle J., Professor and *Chair*, Ph.D., University of Iowa, 1988; 1989.
 Woehlke, Paula L., Professor, *Emerita*, Ph.D., Arizona State University, 1973; 1973.
 Yates, J. W., Professor, *Emeritus*, Ed.D., University of Missouri-Columbia, 1951; 1964.
 Zyromski, Brett E.D., Assistant Professor, Ph.D., North Carolina State University, 2007; 2007.

The Department of Educational Psychology and Special Education offers graduate studies leading to the Master of Science and the Ph.D. degrees in educational psychology. The purposes of these graduate programs are to prepare professional educational psychologists to engage in the practice of their specialization and to pursue research in their areas of interest. Where appropriate, degree requirements will satisfy certification and entitlement requirements. Programs are monitored to be in line with standards set forth by the North Central Association, and the National Council for Accreditation of Teacher Education. Counselor education programs are accredited by the Council for the Accreditation of Counseling and Related Educational Programs (CACREP).

Individualized courses of study are linked to the teaching and research capabilities of the faculty. Sufficient latitude is provided so that students in concert with their adviser and committee plan programs that capitalize on student interests and faculty capabilities. The professional and research specialties of the faculty include human learning and cognition, development, instructional psychology, child

and adult counseling, couple and family counseling, career development, educational measurement and statistics, special education and research design.

Master of Science in Education

Academic experiences leading to the Master of Science in Education degree are provided through concentrations in educational psychology and counselor education. Graduates from these programs are prepared to pursue advanced graduate studies and assume roles as professional counselors in schools, colleges, and other agencies.

Program Requirements. Core requirements consist of competencies in learning, quantitative methods, and development. Specific course selections to meet the degree program are determined by the students and their advisers with the approval of the department chair.

Completion of a thesis or 6 hours of approved course work beyond those requisite for the degree is mandatory to meet the requirement of a master's degree in education.

Students must complete six (6) hours of coursework from the courses listed below:

- AJ 510-8 (4,4) Research in Criminal Justice
- AJ 517-3 Quantitative Techniques in Criminal Justice Research
- CI 500-3 Introduction to Research Methods in Education
- CI 582-3 Advanced Research Methods in Education
- EAHE 500-3 Educational Research Methods
- EAHE 547-3 Evaluating Educational Research
- EAHE 585-3 Survey Research Methodology
- EPSY 506-4 Inferential Statistics
- EPSY 507-4 Multiple Regression
- EPSY 508-4 Experimental Design in Education Research
- EPSY 531-3 Principles of Measurement
- LING 544-3 Discourse Analysis
- LING 546-3 Conversation Analysis: Pragmatics

- LING 547-3 Conversation Analysis: Ethnomethodology
- LING 549-3 Research Methods in Linguistics and TESOL
- PSYC 522-4 Experimental Design and Analysis
- PSYC 523-3 Research Methods in Applied and Professional Psychology
- PSYC 524-3 Multivariate Methods of Psychology
- PSYC 525-3 Psychological Measurement
- PSYC 526-3 Research in Counseling Psychology
- SOC 512-4 Quantitative Sociological Research
- SOC 514-4 Quantitative Methodology
- SOC 526-8 (4, 4) Quantitative Methods in Sociology
- SPCM 501-3 Introduction to Speech Communication Research
- SPCM 502-3 Seminar: Quantitative Communication Research
- REHB 509-6 (3, 3) Behavior Analysis Research Designs
- REHB 535-3 Behavioral Observation Methods
- REHB 578-3 Program Evaluation in Rehabilitation
- WED 561-3 Research Methods

An oral or written comprehensive examination covering course work or thesis is required before students can be recommended for graduation.

Admission and Retention. Students seeking admission to master's degree studies in the department must apply to and meet requirements for admission to the Graduate School and be approved by the Department of Educational Psychology and Special Education. Scores from the Graduate Record Examination (GRE), an undergraduate grade point average of 2.7 ($A = 4.0$), letters of recommendation, and evidence of successful experience or commitment to the profession are required for admission. Each application is considered on an individual

basis. Professional qualifications, graduate courses taken, and student goals are also considered.

The adviser, along with the faculty of the specialty, is responsible for reviewing student progress each semester. Students are required to maintain a 3.0 grade point average and to be progressing toward their professional goals within the guidelines formulated in the advisement process. Failure to make progress or violations of department, college, or Graduate School regulations may result in dismissal from the program.

Specific information about programs and how to apply may be obtained by calling 618-536-7763 or writing to: Chair, Department of Educational Psychology and Special Education, Southern Illinois University, Carbondale IL 62901-4618

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Educational Psychology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Educational Psychology

The master's degree concentration in educational psychology is a minimum 32-hour program. Students who wish to acquire knowledge and skills in human learning, development, and research design are required to write a thesis (6 hours) or write a research paper (3 hours) and complete an accompanying course (3 hours). Graduates from this program have taken positions as teachers, researchers, instructional designers, and evaluators in the military, schools, industry, and other institutions. Others have continued to pursue their education at the Ph.D. level. Current teachers can complete requirements for recertification while earning an M.S.Ed. degree.

Counselor Education

The master's degree in counselor education is approved by the Council for Accreditation of Counseling and Related Educational Programs (CACREP) in three program areas: Community Counseling, School Counseling, and Couple and Family Counseling. Community and School Counseling are minimum 48-hour programs; Couple and Family Counseling is a minimum 60-hour program. These programs prepare students to work with children and adults in mental health settings, elementary and secondary schools, higher education, and other agencies or settings. Emphasis is placed on child, adolescent, adult, family and couples counseling.

The Community Counseling and Couple and Family Counseling programs prepare students to meet the educational requirements for licensure in Illinois. The School Counseling program fulfills requirements of the entitlement program for certification in Illinois.

Students who first pursue the program in educational psychology as a preparation for counseling certification should indicate this intent at the beginning of their program. In this manner, experiences can be planned to better meet the needs of the student.

Doctor of Philosophy Degree in Education

Advanced studies leading to a Ph.D. degree are offered by the Department of Educational Psychology and Special Education. Individualized programs of study, based on a core foundation, are required for each candidate. Students along with their doctoral committee plan programs related to student background and interests, the professional requirements of the program, and the professional competencies of the faculty.

Departmental faculty provide research and professional competencies in counselor education, human learning and development, educational measurement and statistics, and special education.

Application. Students must apply to the Chair, Department of Educational Psychology and Special Education, Southern Illinois University, Carbondale IL 62901-4618. Phone: 618-536-7763. Specific questions about programs and how to apply should be directed to the address identified above or by phone.

A non-refundable application fee of \$50.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.

Admission and Retention. Applications are reviewed by the department faculty and recommendations forwarded to the College of Education and Human Services and the Graduate School. Test scores from the Graduate Record Examination are required. A personal interview with a candidate may be required. Admission to the program is dependent on (1) the applicant's grades in their master's program, (2) GRE scores, (3) prior course work, and (4) availability of qualified faculty to supervise the applicant's doctoral work. Applicants are expected to have prior course work in (1) research methods, (2) human learning and development, and (3) individual differences or special populations. Applicants must also meet the admission requirements of their chosen specialty.

The performance of each doctoral candidate is reviewed each semester. Maintenance of 3.0 grade point average

and compliance with policies of the department, the college, and Graduate School are also required.

Core Requirements. Students are required to take core courses in the research and historical-philosophical issues in educational psychology. Specific courses or other degree requirements are determined by the department upon recommendation from the student's doctoral committee. Students are expected to bring to the doctoral program a background of course work and experiences commensurate with a master's degree in educational psychology that includes foundations in psychology, education, and other related areas.

Research, Teaching, and Practicum Experience. Each student is required to demonstrate professional competence through supervised experiences. These experiences include research, teaching, and personal interactions in consulting, psychometric, or counseling situations. Doctoral students participate in internships or other applied experiences in their area of professional specialization. Internships are usually of a year's duration and must be approved by the department.

Preliminary Examinations. All Ph.D. candidates must pass a preliminary examination over their doctoral course work before formal admission to candidacy. The doctoral committee with the concurrence of the department is responsible for the development and evaluation of the preliminary examination.

Doctoral Committees. Students are assigned a doctoral adviser upon admission to the program. Before the end of the first year of doctoral study a doctoral committee is constituted. At this time a new chair may be chosen to head the committee which assists and evaluates students in their program. The committee also is responsible for an oral examination over the completed dissertation and student's general knowledge of the professional field.

Certificate in Conflict Resolution

The Department of Educational Psychology and Special Education participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers EPSY 430, EPSY 493, EPSY 494A, EPSY 537, and EPSY 540, as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses in this department may require the purchase of supplemental materials. Field trips are required for certain course

402-3 Basic Statistics. A master's level terminal statistics course. Emphasis on descriptive statistics and graphical representation of data. Includes a brief introduction to hypothesis testing procedure.

412-3 Human Behavior and Mental Health. This course is designed to provide an overview of the factors and conditions in life that tend to affect mental health and the community resources available to address mental health needs. Social, political, economic and professional resources will be examined as they relate to the development, implementation and coordination of mental health services and systems.

418-3 Psychology of the Classroom. An examination of the main factors that affect learning in classroom settings. Includes an analysis of theory and research on cognitive development, personality development, individual differences, cultural and socioeconomic diversity, learning processes, motivation, and assessment, as well as the implications of research findings for classroom instruction.

422-3 Introduction to Individual and Group Assessment. The student will be introduced to the basic testing process and the problems related to individual group assessment and will be expected to choose a project for study and investigation. The project must be related in some way to the role and function of the counselor in different settings. The various types of assessment instruments and the manner in which the data derived therefrom can be employed in consultation.

430-3 Conflict Resolution Skills for Education Environments. The purpose of the course is to help educators and others to develop the understanding and skills necessary to promote peaceable means for resolving conflict with and among children and adolescents in an educational environment. The course will focus on participants developing personal techniques and approaches to assist children and adolescents to develop age-appropriate conflict resolution skills.

481-1 to 12 Seminar. Conducted by staff members and distinguished guest lecturers on pertinent topics. Prerequisite: consent of instructor and department.

491-1 to 6 Special Research Problem—Individual Study. For majors. Formulating, investigating, and reporting on a problem in the area of applied psychology. Prerequisite: advanced standing and consent of department.

493-3 Counseling Skill Development. Through simulated counseling situations and extensive examination of counseling case studies, counseling skills are examined and practiced.

501-3 Professional, Ethical, and Legal Issues in Community Counseling. This course provides an overview of the history, foundations, practices and ethical

and legal issues relevant to community counseling. This course does not include specific skill attainment.

502-3 Professional, Ethical, and Legal Issues in School Counseling. This course provides an overview of the history, foundations, practices, and ethical and legal issues relevant to school counseling. The course does not include specific skill attainment.

503-3 Professional, Ethical, and Legal Issues in Marital, Couple, and Family Counseling. This course provides an overview of the history, foundations, practices, and ethical and legal issues relevant to marital, couples, and family counseling. This course does not include specific skill attainment. Prerequisite: EPSY 541.

505-3 Intro to Quantitative Research Methods. This course is required of all students enrolled in the doctoral program of the College of Education and Human Services. It offers an introduction to the reading of quantitative research literature and the development of quantitative research methods that can be used to address areas of scholarly inquiry within the academic concentrations found in the College. The course is a prerequisite for EPSY 506, Inferential Statistics.

506-4 Inferential Statistics. Covers basic descriptive techniques such as central tendency, measures of variability and graphical presentation of data. In addition, hypothesis testing, analysis of variance, nonparametrics and simple linear prediction will be covered.

507-4 Multiple Regression. The general linear model is presented which allows for hypothesis testing including correlational analysis, analysis of variance and analysis of covariance. Non-linear relationships are presented. Emphasis is placed on testing the stated research hypotheses. Prerequisite: 506.

508-4 Experimental Design in Educational Research. Strategies of designing research studies and the analysis of data from studies using linear models are examined. Emphasis will be placed on internal and external validity and factors that affect power in variance designs including completely randomized designs, Latin square, repeated measures and analysis of covariance with each of the above designs. Prerequisite: 506 or equivalent.

511-3 Instructional Psychology. Critical review of empirical, methodological and theoretical developments in the experimental study of instructional variables as related to student behavior. Prerequisite: Psychology 407 or equivalent is recommended.

512-3 Life-Span Development. Investigates physical, intellectual and social development throughout the life span. Provides information regarding learner characteristics and transitions. Focus is on applications for education, counseling and related services.

521-3 Consultation of Schools and Organizational Systems. Surveys the theories and available research on several approaches to consultation with families, schools and other organizational systems. Systemic approaches to consultation are emphasized.

531-3 Principles of Measurement. Intended to provide theoretical principles of measurement which are applicable to both teaching and research. Part of the course will be devoted to current issues in measurement and to practical applications to these theoretical principles. Prerequisite: 506.

537-3 Counseling Children: Theory, Techniques, and Practice. The foundations and techniques of individual and group counseling with particular emphasis on theories, operational approaches, tools and related procedures. Prerequisite: 493 or concurrent enrollment.

540-3 Issues and Trends in Counseling. Students will examine current problems, issues, and trends with an emphasis on strategies for solving the problems; clarifying the issues and placing them in proper perspective; examining possible ramification of the trends.

541-3 Theories of Counseling. This course presents an overview of current theories of counseling with a special focus on the philosophical assumptions, key concepts, techniques and practical applications of each approach. Each of the theories will be examined critically such that the student can begin to formulate an integrated personal theory of counseling. Prerequisite: 493 or concurrent enrollment.

542-3 Career Development Procedures and Practices. For pupil personnel workers, teachers, and administrators to give an orientation to theoretical, economic, and informational aspects of career guidance and to provide experience with using career information in counseling and decision making. Obtaining occupational and information materials for use in guidance and teaching.

543-3 Group Theory and Practice. Focuses on the theory, functions, and techniques of group procedures appropriately applied to decision making, problem solving and resolution of conflict. Major emphasis is given to the dynamics of group behavior, the social-psychological interaction of small groups and their applications to group counseling. Dual emphasis is placed upon interpersonal self-understanding and the familiarity with group procedures. Prerequisite: 493.

544-3 Appraisal in Counseling. Principles and procedures for gathering appraisal and assessment information about people. Theoretical basis for describing and comparing individuals as well as assessing developmental stages and types will be covered. Particular emphasis will be the validity and reliability of data collection methods, interpretation of this information to individuals and procedures for selection of instruments.

545-3 Cross Cultural Factors Affecting Counseling. Designed to cover special problems of different cultural groups in the counseling process. The influence of culture upon values, beliefs, interests and feelings will be explored as they relate to the rights of the client. Prerequisite: 493 and 541.

547-3 Research and Evaluation in Counseling. This course provides knowledge of the field of counseling

research and specific methods for conducting and critically reading research as well as applications of needs assessment and program evaluation including using computers for data analysis and legal and ethical considerations in research and evaluation. Prerequisite: advanced standing in counselor education program.

548A-3 School Counseling Practicum. A combined seminar, laboratory, and field experience representing the central focus of the program in school counseling. Enables the student to practice the role of the counselor under close supervision. Graded *S/U* only. Prerequisite: 493, 541; admitted to counseling program.

548B-3 Counseling Practicum. Practice of counseling skills with different populations in varied settings. The professional setting depends on the student's interest area. Individual and group supervision are provided. Use of tape recorder is required. Graded *S/U* only. Prerequisite: 493, 541, admitted to counseling program.

548C-3 Career Group Practicum. Supervision in the creation and maintenance of small group process for the purpose of career development. Application of theoretical models is stressed concurrently with entry level skills in the facilitation of small groups and career counseling. Graded *S/U* only. Prerequisite: 542, 543, admitted to counseling program.

548E-3 Practicum in Couples and Family Counseling. Supervised on-campus counseling experience with couples and families. Supervision will be individual as well as within the context of a therapy team. Graded *S/U* only. Prerequisite: 493, 503, 548a or b, concurrent enrollment in 560 and consent of instructor.

551-3 The Supervision of Practicum. Doctoral students will: become familiar with models of counseling supervision; practice supervision with Master's students; and be acquainted with the research in the counselor training and supervision. Individual and group supervision are provided. Tape recording of supervision sessions is required.

560-1 to 3 Seminar in Couple and Family Counseling. Seminar will focus on current clinical and research topics in the field of couple and family counseling and the general issues that emerge from the couple and family counseling practicum. Prerequisite: 548a or b, 503, concurrent enrollment in 548e and permission of instructor.

562-6 (3,3) Human Development in Education. Theories and research evidence regarding child development and behavior are investigated. These considerations focus upon implications for research and educational practices. (a) Childhood. (b) Adolescent.

568-3 to 12 (3,3,3,3) Topical Seminar in Counseling. A series of advanced seminars in counseling. Sections a through c are to be taken only once. Section d may be repeated as topics vary. Students may take up to 12 credits only for 568. (a) Professional Orientation. (b) Advanced Theory. (c) Conducting Research. (d) Selected Topics. Prerequisite: admission to Ph.D. program.

575-4 Philosophical and Historical Issues. Course will explore philosophical and historical issues related to studies in human learning, measurement and statistics, counseling and special education. The course will require participants to make major presentations and prepare scholarly papers. Prerequisite: Admission to doctoral program.

576-4 Research Issues in Educational Psychology. Introduction to research methods and current research issues in the areas of human learning and development, statistics and measurement, counselor education and special education. The course will focus on what is currently known about selected major research issues in each of the above areas and what these findings imply for educational practice. Prerequisite: admission to doctoral program.

580-2 to 29 (3,3,3,3,2,3,3,3,2 to 6) Doctoral Seminar in Educational Measurement and Statistics. A series of advanced seminars on statistics and measurement. Sections a through h may be taken only once each. Section i may be repeated as topics vary. (a) Advanced regression analysis. (b) Factor analysis. (c) Multivariate methods. (d) Nonparametric methods. (e) Evaluation methods. (f) Experimental design. (g) Advanced measurement theory. (h) Computer applications. (i) Selected topics.

590-3 Family and Systems. This course provides students with advanced study into the philosophical foundations, theoretical orientations, current research and practical applications of selected approaches to couple and family counseling/therapy. Prerequisite: 503, 548e, 560, consent of instructor; 548e and 560 may be concurrent.

591-3 or 6 Internship in Counseling. For each three credits a supervised internship of 300 clock hours at a site that offers opportunities for individual counseling and group work. The internship provides an opportunity for the student to perform a variety of activities that a regular employed staff member would be expected to perform. A minimum of 120 hours of client services with clients is expected with on-site and on-campus supervision. Graded *S/U* only. Prerequisite: 548a or b and 548c.

592-1 to 8 (1 to 6 per semester) Independent Study and Investigation. For advanced graduate students. Topics of interest to the individual student are studied under supervision of a department staff member. Prerequisite: consent of department.

593-1 to 4 Individual Research. For advanced graduate students in Educational Psychology. Formulating, investigating and reporting of research problems in the area of Educational Psychology. Prerequisite: consent of department.

594-1 to 6 Advanced Practicum. Primarily for advanced Master's or doctoral students who want to continue developing their counseling skills. Counseling settings are individually arranged, however, they typically follow the 494 practicum experience. Graded *S/U* only.

595-1 to 8 Internship in the Psychology of Teaching. Full- or half-time teaching practice in the management of classroom behavior, and the design, delivery, and evaluation of instruction. Interns will be supervised by University staff. Graded *S/U* only. Prerequisite: consent of department.

597-6 Doctoral Internship in Counseling. This experience is designed to prepare students for leadership positions in the education and supervision of counselors. It should be consistent with program's doctoral internship guidelines, as well as specific student goals. Internship occurs at the end of the student's doctoral program and is coordinated by the student's program chair. An internship plan is to be developed by the student with guidance from the program chair, and may include the following counselor education and supervision activities: advanced counseling practice, supervision, teaching, professional service, and research. Prerequisite: 551, 594, consent of program.

599-1 to 6 Thesis. Prerequisite: consent of department.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

ELECTRICAL AND COMPUTER ENGINEERING

COLLEGE OF ENGINEERING

www.heera.engr.siu.edu/elec/index.html

eedept@siu.edu

Graduate Faculty:

Ahmed, Shaikh S., Assistant Professor, Ph.D., Arizona, 2005; 2007. Nanotechnology, semiconductor devices and circuit design, simulation and characterization.

Botros, Nazeih M., Professor, Ph.D., University of Oklahoma, 1985; 1985. Digital hardware design, digital signal processing, digital instrumentation, neural networks, robot sensing, and bioengineering.

Brown, David P., Professor, *Emeritus*, Ph.D., Michigan State University, 1961; 1983.

Chen, Ying (Ada), Assistant Professor, Ph.D., Duke, 2007; 2007. Biomedical imaging, image reconstruction, digital tomosynthesis, image quality analysis, signal and image processing, simulation and computing.

Daneshdoost, Morteza, Professor, Ph.D., Drexel University, 1984; 1984. Electric power systems, linear systems and circuits, control systems optimization techniques, expert systems, computer graphics, MMI.

Feiste, Vernold, K., Associate Professor, *Emeritus*, Ph.D., University of Missouri-Columbia, 1966; 1966.

Galanos, Glafkos D., Professor and *Chair*, Ph.D., University of Manchester, England, 1970; 1987. Power systems, HVDC transmission, power electronics systems.

Gupta, Lalit, Professor, Ph.D., Southern Methodist University, 1986; 1986. Computer vision, pattern recognition, digital signal processing, neural networks.

Harackiewicz, Frances J., Professor, Ph.D., University of Massachusetts-Amherst, 1990; 1989. Electromagnetics, antenna theory and design, microwaves, microstrip phased arrays and anisotropic materials.

Hatziaodoniu, Constantine, Professor, Ph.D., West Virginia University, 1987; 1987. Power systems modeling, simulation and control, high voltage DC transmission, power electronics, power systems transient.

Hu, Chia-Lun John, Professor, *Emeritus*, Ph.D., University of Colorado, 1966; 1981.

Kagaris, Dimitrios, Professor, Ph.D., Dartmouth College, 1994; 1995. VLSI design automation, digital circuit testing, communication networks.

Osborne, William, Professor, *Emeritus*, Ph.D., New Mexico State University, 1970; 2005.

Pourboghra, Farzad, Professor, Ph.D., University of Iowa, 1984; 1984. Optimal control, robust and adaptive control, dynamic neural networks, robotics, embedded control systems, sensor networks.

Qin, Xianping, Assistant Professor, Ph.D. Northwestern University, 2005; 2008.

Ramaprasad, Harini, Assistant Professor, Ph.D., North Carolina State University, 2008; 2008.

Rawlings, Charles A., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1974; 1964.

Sayeh, Mohammad R., Professor, Ph.D., Oklahoma State University, 1985; 1986. Neural networks, optical computing, image processing, stochastic modeling, quantum electronics.

Schoen, Alan, Professor, *Emeritus*, Ph.D., University of Illinois, 1958; 1973.

Smith, James G., Professor, Ph.D., *Emeritus*, University of Missouri-Rolla, 1967; 1966.

Tragoudas, Spyros, Professor, Ph.D., University of Texas at Dallas, 1991; 1999. Design automation for VLSI, testing and verification of digital circuiting, computer networks.

Viswanathan, Ramanarayanan, Professor and *Interim Dean*, Ph.D., Southern Methodist University, 1983; 1983. Detection and estimation theory, spread spectrum communication, communication theory, signal processing.

Wang, Haibo, Associate Professor, Ph.D., University of Arizona, 2002; 2002. Mixed-signal VLSI design and testing, digital VLSI, VLSI design automation.

Weng, Ning, Assistant Professor, Ph.D., University of Massachusetts at Amherst, 2005; 2005. High performance routers, network processors, system-on-a-chip, computer architectures.

Zhang, Wei, Associate Professor, Ph.D., Pennsylvania State University, 2003; 2003. Computer architecture, compilers, hardware/software co-design.

Master of Science Degree in Electrical and Computer Engineering

The College of Engineering offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees. The Department of Electrical and Computer Engineering offers programs of study and research leading to the Master of Science degree in Electrical and Computer Engineering and the Doctor of Philosophy in Electrical and Computer Engineering. The Department provides a rich

environment for educational and professional advancement in the following areas:

Antennas, circuits and systems theory, electromagnetics, robust and adaptive control, robotics, embedded control, MEMS, plasma processing, energy conversion, power systems, power electronics, pattern recognition, image processing, biomedical engineering, neural networks, opti-

computing, stochastic modeling, wireless communications, detection and estimation theory, communication networks, mobile *ad hoc* networks, sensor networks, digital systems, programmable ASICs design, bioengineering, computer architecture, CMOS VLSI, fault tolerance, mixed signal testing and design, low power system design, hardware/software co-design, synthesis and verification of digital systems, physical design automation, and VLSI testing.

The ECE programs of study provide a balance between formal classroom instruction and research, and are tailored to the individual student's academic and professional goals. Graduates of the program enjoy excellent employment opportunities and are highly recruited worldwide in industry, government, and academia.

Admission. The program is designed for individuals holding a Bachelor of Science degree in electrical or computer engineering or related field. Qualified applicants with Bachelor of Science in other areas of engineering and science may be able to enroll in the program with additional preparation. (Approved by the Department on a case-by-case basis).

Admission to the program is based on the following factors: grade point average, class ranking, GRE scores (especially quantitative) and faculty recommendation letters. The admission requirements of the Department are higher than the minimum requirements of the Graduate School. The TOEFL score requirement for international applicants is 550 (the same as required by the Graduate School). Admission to the program is granted by the Chair of the Department, upon recommendation by the faculty.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Electrical and Computer Engineering. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Requirements. The Department offers two different programs leading to the Master of Science degree, the Thesis and the Non-thesis program. The requirements for each of the programs are as follows:

The thesis program leading to the Master of Science degree in Electrical and Computer Engineering requires 30 semester hours of credit. Six hours of thesis (ECE 599), one hour of ECE seminar (ECE 580) and at least fifteen hours of 500-level courses are required. Thus, a maximum of eight hours of 400-level courses could be counted toward the degree requirements. With the approval of the Department, a maximum of six hours from academic units outside the ECE Department could be applied toward the degree. The degree is awarded following a comprehensive examination covering the candidate's entire program of study, including the thesis.

The non-thesis program leading to the Master of Science degree in Electrical and Computer Engineering requires 30

semester hours of credit. At least 22 hours should be in 500-level courses, thus, a maximum of eight hours of 400-level courses could be counted toward the degree requirements. With the approval of the Department, a maximum of six hours from academic units outside the ECE Department could be applied toward the degree.

Qualified individuals with exceptional credentials may apply for assistantships, fellowships, and scholarships, either at the same time they apply for admission, or at any time during the course of their studies.

Please address any correspondence to "Master of Science Program," Department of Electrical and Computer Engineering, Southern Illinois University Carbondale, Carbondale, Illinois 62901-6603. For telephone inquiries please call 618-536-2364, and refer to the Master of Science Program. The Electrical and Computer Engineering facsimile number is 618-453-7972, and the email address is ecedept@siu.edu. The Electrical and Computer Engineering home page address is <http://heera.engr.siu.edu/elec/index.htm>.

ECE/LAW in Electrical and Computer Engineering/Juris Doctor

Southern Illinois University Carbondale is one of the few institutions in the country to offer a concurrent degree in Electrical and Computer Engineering and Law. Students prepared for this program are expected to possess an undergraduate degree in electrical engineering, computer engineering or a related field. Students are able to tailor their program of study to focus on legal principles and policies involving the engineering profession including patent, copyright, trademark, environmental and electronic commerce laws, federal regulation of electronic media and other engineering-related areas of law.

Students must meet the requirements of admission and be admitted separately to the Master of Science program in Electrical and Computer Engineering and the School of Law. Accepted students could complete the concurrent program in as few as three years, including summers. Law students interested in this program should consult with the School of Law Associate Dean for Academic Affairs and with the Chair of the Department of Electrical and Computer Engineering.

Thesis Option

The course of study consists of the following:

- Twenty-one hours of ECE courses, including ECE 599, Master's Thesis (six hours) and ECE 592, Special Investigations (three hours).
- Eighty-one hours of LAW courses, including nine hours from an approved list of LAW courses.

The nine hours of ECE 599 and ECE 592 are applied toward the J.D. degree, for a total of 90 hours. The nine hours of LAW courses (from the approved list of LAW courses) are applied toward the M.S. degree in ECE, for a total of 30 hours.

Non-Thesis Option

The course of study consists of the following:

- Twenty-one hours of ECE courses, including ECE 593, Advanced Topics (three hours) and ECE 592, Special Investigations (three hours).
- Eighty-one hours of LAW courses, including nine hours from an approved list of LAW courses.

Nine hours of ECE courses, including ECE 592 and ECE 593 are applied toward the J.D. degree, for a total of 90 hours. The nine hours of LAW courses (from the approved list of LAW courses) are applied toward the M.S. in ECE, for a total of 30 hours.

List of Approved LAW Courses

LAW 525 Federal Income Tax
 LAW 528 Corporations
 LAW 545 International Trade Law
 LAW 546 Federal Business Taxation
 LAW 548 Environmental Law I: Laws and Policies
 LAW 559 International Business Transactions
 LAW 562 Copyright Law
 LAW 564 Law and Economics
 LAW 565 Antitrust
 LAW 567 Electronic Commerce
 LAW 568 Water Law
 LAW 586 Business Planning
 LAW 610 Federal Regulation of Electronic Media
 LAW 630 Intellectual Property
 LAW 634 Trademarks and Unfair Competition
 LAW 660 Food, Drug and Medical Device Law

Doctor of Philosophy in Electrical and Computer Engineering

Educational Objectives. The program is designed to achieve the following academic objectives: (a) to fulfill the obligation of the ECE Department to provide high quality education through the doctoral level as is mandated by the mission statement of the University; (b) to provide the students with the training necessary to successfully apply the fundamental concepts and methods of electrical and computer engineering to specific areas of research and development; (c) to provide the graduates with the ability to independently organize and conduct research in electrical and computer engineering; (d) to provide the graduates with the ability to concisely disseminate existing and new knowledge and to accurately present their research plans in writing.

Program Structure. The program offers two areas of concentration: (a) Electrical Engineering and (b) Computer Engineering. The concentration in Electrical Engineering offers three tracks: (1) Communications, (2) Electronics & Optics, (3) Systems. The core for each of the areas above includes six courses as follows:

ELECTRICAL ENGINEERING			COMPUTER ENGINEERING
Communications	Electronics & Optics	Systems	
ECE 551	ECE 540	ECE 551	ECE 521
ECE 552	ECE 543	ECE 564	ECE 523
ECE 558	ECE 547	ECE 565	ECE 524
ECE 564	ECE 549	ECE 584	ECE 528
ECE 568	ECE 573	ECE 587	ECE 531
ECE 577	ECE 577	ECE 588	ECE 532

Admission. Admission to the program requires a Master of Science degree in Electrical or Computer Engineering or a related field with a GPA of 3.25/4.0 or higher. Applications for admission must include the following: a statement of interest, transcripts, GRE scores, three reference letters and TOEFL score (where appropriate), as required by the Graduate School. Admission to the program is made by the Department Chair upon recommendation by the ECE Graduate Committee.

Advisement. Upon admission the Chair assigns the advisor (and chair of the student's committee) and two committee members, to assist the student in selecting the appropriate core courses and in developing a plan of study.

Curriculum. The curriculum consists of fifty hours of credit beyond the M.S. degree. Eighteen hours of 500-level ECE courses, of which nine hours must be taken from the selected core, three hours of mathematics, three additional hours of mathematics or science, two hours of seminar and twenty-four hours of dissertation. The mathematics and science courses must be approved by the student's Committee. Core courses successfully completed for the M.S. degree can be used to fulfill the core requirements, but additional courses must be taken to satisfy the requirement of eighteen hours of 500-level ECE courses beyond the M.S. degree. The objective of the core is to provide the candidate with the foundation necessary to engage successfully in the selected research area. Thus, the core design fulfills the research tool requirement specified in the Graduate School guidelines.

Qualifying Examinations. Upon completion of the core courses the student may take the qualifying examination. This examination covers the material of the core courses selected and is administered by the student's committee. If not successful, the committee may allow the student to repeat the whole or part of the examination one more time. The qualifying examination, in whole or in part, cannot be taken more than two times.

Candidacy. Admission to candidacy requires: (a) successful completion of the qualifying examination (which satisfies the research tool requirement of the Graduate School) and (b) successful completion of twenty-four hours of credit (which satisfies the residency requirement of the Graduate School).

Dissertation Committee. Following the admission to candidacy the Department Chair in consultation with the student's advisor (dissertation supervisor) appoints the dissertation committee, which shall consist of five faculty members with at least one (but not more than two) outside the ECE Department. The student's dissertation supervisor shall be one of the five members and shall chair this committee.

Dissertation Proposal. Following the admission to candidacy and upon completion of all the coursework, the candidate will prepare and submit a formal written dissertation proposal, defining the proposed research and the proposed line of inquiry. The candidate subsequently must make an oral presentation of the dissertation proposal to the members of the dissertation committee in an open forum. A public announcement of this event must be made at least five days in advance.

Oral Examination. In the framework of the oral presentation of the dissertation proposal, the candidate is expected to address and respond to any question (by the members of

the committee) related to material covered by all the courses taken during his doctoral studies or to the background necessary for the specific area of the proposed research. In addition, the candidate is expected to defend the research methodology and the proposed line of inquiry.

Dissertation Defense. Upon completion of the dissertation, which must demonstrate the ability of the candidate to conduct independent research, the committee will administer the final oral examination. The objective of the final oral examination, conducted in an open forum, will be the defense of the dissertation. Upon satisfactory completion of the dissertation and the final oral examination the committee will recommend the candidate for the doctoral degree.

Time Limits. The upper or lower time limits for completion of each of the steps in the process are the same as those specified by the Graduate School for doctoral programs.

Presentation Skills. Technical writing and oral presentation skills are important particularly for a possible academic career. During the course of study the student will be provided with opportunities to develop these skills (by attending technical writing classes and seminars). It is desirable to assign some teaching assistant duties to the candidate to gain some teaching experiences. The dissertation committee shall evaluate the candidate's skills both in technical writing and oral presentation.

Courses (ECE)

Graduate work in the Department of Electrical and Computer Engineering is offered toward a concentration for the Master of Science degree in Engineering. Safety glasses are required for some of the courses in this department. Four-hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

421-4 Synthesis with Hardware Descriptive Languages. Fundamental concepts, techniques and tools for computer-aided design of simple digital systems. Modeling and simulation of digital systems using hardware descriptive languages. Behavioral, data flow and structural modeling. Synthesis, optimization and verification. Lecture and laboratory. Prerequisite: 327.

422-4 Introduction to Data Communications Networks. Protocol architecture. Signaling and data encoding techniques. Circuit and packet switching technologies. Data link layer, routing, internet and transport protocols. Medium access control (MAC) sublayer and local area network (LAN) technologies. Cryptography. Prerequisite: 315 and 355.

423-4 Digital VLSI Design. Principles of the design and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. MOS transistor theory and the CMOS technology. Characterization and perform-

ance estimation of CMOS gates, CMOS gate and circuit design. Layout and simulation using CAD tools. CMOS design of datapath subsystems. Design of finite state machines. Examples of CMOS system designs. Laboratory experience in CMOS VLSI design. Lecture and Laboratory (VLSI design). Prerequisite: 327 and 345.

424-4 Microprocessor-Based System. Microprocessor technology. Design, construction and programming of microprocessor-based systems. Lecture and laboratory. Cost of parts for microprocessor-based system, approximately \$80. Prerequisite: 329 or concurrent enrollment or consent of instructor.

425-4 VLSI Design and Test Automation. Principles of the automated synthesis, verification, testing and layout of Very Large Scale Integrated (VLSI) circuits concentrating on the CMOS technology. Resource allocation and scheduling in high-level synthesis. Automation of the logic synthesis for combinational and sequential logic. The physical design automation cycle and CMOS technology considerations. Fault modeling and testing. Timing analysis. Laboratory experience using commercial tools for synthesis and layout. Prerequisite: 329, 345.

428-4 Programmable ASICs Design. Introduction to theoretical concepts and experimental design and construction of Application-Specific Integrated Circuits (ASICs). Rapid

prototyping of data path and control in computer systems. Field Programmable Gate Arrays (FPGAs) or similar logic. Lecture and laboratory. Laboratory fee of \$10 to help defray costs of consumable items. Prerequisite: 329 or consent.

429-4 Computer Systems Architecture. Advanced computer arithmetic, principles of performance evaluation, instruction set principles, pipeline considerations and instruction level parallelism, vector processors, memory hierarchy design. Prerequisite: 329.

432-4 Programming for Multi-Core Processors. Multi-core architecture, threads, thread execution models, thread priority and scheduling, concurrency, multi-threaded programming models, synchronization, performance measurement and local balance, software tools for multi-threaded programming. Prerequisite: ECE 329, CS 306 or consent of instructor.

440-4 CMOS Radio-Frequency Integrated Circuit Design I. The basics of CMOS RFIC design, including basic concepts in RFIC design, CMOS (active and passive) microwave devices, matching networks and signal flow graph, scattering parameter microwave circuit design and analysis methods. Lecture and laboratory. Prerequisite: 345, 375; or equivalent.

441-4 Photonics I. Ray optics, wave optics, beam optics, polarization of light, statistical optics, photons and atoms. Prerequisite: 375 with a grade of C or better.

446-4 Electronic Circuit Design. Analysis and design of electronic circuits, both discrete and integrated. Computer-aided circuit design and analysis. Consideration of wideband, power and tuned amplifiers; switching circuits; feedback; and oscillators. Design projects. Lecture and laboratory. Laboratory fee of \$10 to defray cost of consumable items. Prerequisite: 345 and 355 or concurrent enrollment.

447-4 Electronic Devices. Fundamental principles of semiconductor carrier statistics, band diagrams, pn-junction diodes, Schottky diodes, BJTs, MOS capacitors and MOSFETs for advanced VLSI technology. Lecture and laboratory. Prerequisite: 345, 375 or equivalent.

448-4 Photonics II. Fourier optics, fiber optics, electro-optics, nonlinear optical media, acousto-optics, photonic switching, optical interconnections and optical storage. Prerequisite: 441 or consent of instructor.

456-3 Embedded Control and Mechatronics. Introduction to mechatronic systems, systems modeling and simulation, sensors and actuators, real-time interfacing, DSPs and microcontrollers, analysis or sampled-data systems, z-transform, digital control design techniques, emulation methods, direct method, industrial applications. Lecture and laboratory. Prerequisite: 315 and 356.

459-4 MEMS and Micro-Engineering. Introduction to micro electro-mechanical systems (MEMS), manufacturing techniques, microsensors, microactuators, microelectronics and micro-controllers. Lecture and laboratory. Prerequisite: 315 and 356.

467-4 Introduction to Biomedical Imaging. Biomedical imaging. X-ray imaging. Computed tomography (CT). Ultrasound. Magnetic resonance imaging (MRI). Image quality. Image reconstruction. Prerequisite: ECE355 or consent of instructor.

468-4 Digital Signal Processing. Discrete time signals and systems; z-transform; discrete Fourier transform, fast Fourier transform algorithms; digital filter design; digital filter realizations. Lecture and laboratory. Prerequisite: 355.

471-3 Wireless and Personal Communications Systems. Overview of wireless technologies, access technologies and cellular systems. Fundamentals of radio and cellular communications. Digital modulation techniques. Antennas and diversity systems. Concepts of packet radio systems. North American Cellular and PCS systems. Prerequisite: 315 and 355.

472-4 Antennas I. Analysis, design, fabrication, measurement and CAD applied to basic antenna types. Fundamental parameters. Friis transmission equation. Impedance and pattern measurements. Resonant microstrip and wire antennas. Arrays and line sources. Lecture and Laboratory. Prerequisite: 375.

476-4 Introduction to Broadband Communication Systems. Digital transmission fundamentals. Satellite, microwave, video coding and optical transmission. Prerequisite: 315, 355 and 375.

477-3 Fields and Waves I. Transmission-line for communications. Guided wave principles and resonators. Applications in electronics, optoelectronics and photonics. Principles of radiation. Solution techniques for Laplace's equation and one-dimensional wave equation. Prerequisite: 375.

478-4 Analog and Digital Communication. Amplitude, frequency, and phase modulation. Sampling theorem. Pulse code modulation. Baseband binary communication. Digital carrier systems. Optimum signal detection. Lectures and laboratory projects. Prerequisite: 315 and 355.

479-4 Microwave Engineering I. Electromagnetic theory, analysis, design, fabrication, measurement and CAD applied to passive networks at microwave frequencies. Topics include: Transmission lines, Waveguides, Impedance matching, Tuning, Resonators, Scattering parameters, the Smith Chart. Lecture and Laboratory. Prerequisite: 375.

483-4 Power Electronics. Power semiconductor devices. Line commutation: diode and thyristors rectifiers. DC choppers. Switching-mode power supplies. Forced commutation: voltage-sourced inverters. DC drives. AC drives. Prerequisite: 385.

484-4 Computer-Aided Circuit Analysis. Network topology. Analysis of linear and non-linear networks. Standard form of state equations. Numerical solution of state equations. Frequency domain sensitivity calculations. Lecture and projects. Prerequisite: 355.

486-3 Clean Electric Energy. History and Future of the Energy Resources and their use as a component of Electrical Systems. Energy Resources (Fossil, Nuclear, Hydro, Fuel Cell, Wind, Solar, Tidal, Waste, Bio-Energy, Oceanic,

Renewable, etc.) Environmental and Economical Impacts of Various Energy Sources. Electric Energy Generating Plants. Renewable Energy. Prerequisites: Consent of Instructor.

487-4 Power Systems Analysis. Introduction to analysis of electric power systems. Modeling of power system components. Transmission line calculations and modeling. Power system configuration. Per-unit quantities. Power system modeling. Introduction to load-flow analysis. Lecture and laboratory. Prerequisite: 315 and 385.

488-4 Power Systems Engineering. Power flow control. Voltage control. Economic operation of power systems. Symmetrical faults. Symmetrical components. Analysis of asymmetrical faults. Power system stability. Lecture and laboratory. Prerequisite: 356 and 487.

489-3 Electric Power Distribution. Design of primary and secondary distribution networks. Load characteristics. Voltage regulation. Metering techniques and systems. Protection of distribution systems. Special topics related to power distribution. Prerequisite: ECE 385.

493-1 to 4 Special Topics in Electrical Engineering. Lectures on topics of special interest to students in various areas of electrical engineering. Designed to test new and experimental courses in electrical engineering. Prerequisite: consent of instructor.

521-3 Fault-Tolerant Computer Design. (Same as Electrical Computer Engineering 521) Concepts of error detection, location and correction in digital systems. Codes for error detection and correction. Models and simulations of faults. Design of tests for combinatorial and sequential circuits. Testability. Design of digital systems with testability. Prerequisite: 423, 425 or consent of instructor.

522-3 VLSI Circuit Testing. Theoretical and practical aspects of production testing of VLSI circuits. Relations between physical defects and fault models. Procedures for generating test inputs. Design modifications for test application and theory of built-in self-test. Prerequisite: 423, 425 or consent of instructor.

523-3 Low Power VLSI Design. Source of power dissipation, technology impact on power dissipation, low power circuit techniques, energy recovery, synthesis of low power circuits, low power components. Prerequisite: 423.

524-3 Synthesis and Verification of Digital Circuits. Binary decision diagrams, finite state machines and finite automata. Design automation concepts in logic level synthesis, optimization and verification for combinational as well as sequential logic. Technology mapping. Prerequisite: 423, 425.

525-3 Advances in Physical Design Automation. Advances in the automation of VLSI layouts with emphasis on recent developments in deep submicron, FPGA and MCM technologies. Floorplanning, placement, routing objectives in high performance designs using deep submicron technology. Timing analysis in the presence of crosstalk. FPGA architectures and design with dynamically reconfigurable

FPGAs. Physical design automation for MCMs. Prerequisite: 423, 425.

526-3 Network Processing Systems Design. Protocol processing, packet processing algorithms, classification and forwarding, queuing theory, switching fabrics, network processors, network systems design tradeoffs. Prerequisite: 422 and 429 or consent of the instructor.

527-3 Switching Circuit Theory. Study of both combinational and sequential switching circuits with emphasis on sequential networks. Threshold logic. Fault detection and location in combinational circuits. Finite-state machines including: minimization, state assignment, races, state-identification. Asynchronous sequential circuits. Linear sequential machines. Prerequisite: 427.

528-3 Advanced Computer Architecture. Automation issues in architectural-level synthesis. High-level verification. Advances in ALU design, pipelining and resynthesis. Advances in memory design. Advances in parallel architecture. Performance evaluation issues at the architectural level. Prerequisite: 429.

529-3 Analog-to-Digital Conversion and Related Devices. Principles, analysis and design of analog-to-digital converters, video converters, voltage-to-frequency (V/F) and frequency-to-voltage (F/V) converters; universal synchronous/asynchronous receiver/transmitter circuits; hardware implementation of: Fourier analysis, infinite/finite impulse response (IIR/FIR) filters; microcoded systems, fixed and floating point accumulators. Two projects. Prerequisite: 428 and 465 or consent of instructor.

531-3 Mixed Signal VLSI Design. Fundamentals and practical circuit techniques of mixed-signal VLSI design, substrate coupling noise in mixed-signal ICs, D/A and A/D converters, filter circuits, techniques to partition mixed-signal circuits, prototyping and mixed-signal circuits by using FPGAs and FPAA's. Prerequisite: 423 or consent of the instructor.

532-3 Advanced Microprocessor Design. Superscalar pipeline, instruction level parallelism, out-of-order execution, register renaming, instruction/data prefetching, control speculation, data speculation, load forwarding, load bypassing, VLIW. Prerequisite: 429 or consent of instructor.

537-3 Integrated Photonics. Fundamentals of electromagnetic theory, waveguides, photonic structures including photonic crystals and integrated micro-ring resonator, numerical simulations of photonic integrated circuits using the beam propagation method, finite-difference time-domain method, rate equations, and fabrication processes. Prerequisite: ECE 441 or consent of instructor.

540-3 CMOS Radio-Frequency Integrated Circuit Design II. An overview of wireless transceiver architectures, high frequency amplifier design techniques, CMOS low noise amplifiers (LNA), mixers, oscillators, frequency synthesizers, power amplifiers, and CMOS RFIC testing. Prerequisite: 440 or equivalent.

541-3 Nanofabrication. Fundamentals of nanofabrication for integrated circuits, micro-electromechanical systems

(MEMS), biosensors, and chemical sensors. Topics include: materials, hot processing and ion implantation, pattern transfer, thin films, and process integration. Prerequisite: Physics 320, 328; Chemistry 210; or equivalent.

542-3 Optical Information Processing. Fraunhofer and Fresnel diffraction, the reciprocity theorem, Kirchoff's integral. General aspects of mutual coherence. Basic properties of recording materials. Phase transformation of thin lenses, Fourier transform properties of lenses, coherent optical information processing systems and applications. Introduction to holography and its applications. Prerequisite: 355.

543-3 Analog VLSI. Integrated circuit processing steps; NMOS, CMOS, and Bipolar processes. Model for MOS and Bipolar transistors. Computer-aided circuit analysis; SPICE. Basic analog building blocks. Inverter. CAD tools for layout. Participation in the MOSIS fabrication program.

545-3 Advanced Semiconductor Devices. Physical principles and operational characteristics of solid-state devices. p-n junction devices, Interface and thin-film devices, optoelectronic devices, and bulk-effect devices. Fabrication and circuit model of devices. Prerequisite: 447 or consent of instructor.

546-3 Gaseous Electronics. Basic science of gas discharges and plasmas. Electrode phenomenon and plasma oscillations. Application of gas discharges to dry etching, plasma-assisted chemical vapor deposition, and sputtering. Prerequisite: consent of instructor.

547-3 Solid-State Theory of Electronic Materials. Electronic properties of materials and their application to practical devices. Quantum and statistical mechanics. Semiconductor principles and devices. Thermo-electric phenomena. Magnetic materials. Quantum electronics and lasers. Prerequisite: consent of instructor.

548-3 Advanced Electronic Devices. A study of techniques in fabricating microelectronic and discrete electronic devices and influences on device design. Thick-film hybrid, thin-film hybrid, monolithic bipolar, and monolithic MOS technologies will be examined. Prerequisite: 345 and 447.

549-3 Fiber Optics Communication. Fundamentals of step index and graded index fiber waveguides using geometrical optics and Maxwell's equations. Other topics include design criteria, practical coupling techniques, discussion of optical sources and detectors used in light-wave communications, system examples, characterization and measurement techniques. Prerequisite: 447 or 448 or consent of instructor.

550 Nanoelectronic Devices. (A) NanoTransistor: MOS-FETs. Advanced MOSFETs-SOI, SiGe, Fin FETs, carbon nanotubes, nanowires. Quantum devices-RTD, tunnel FET, SETs, qubits. Non-charge based devices-spinFET. (B) NanoMemory: DRAM, Flash, Ovonic, Electrolyte, M/F RAM, Spin torque devices. (C) Energy Conversion Devices: Solar cell and DSSC, Quantum dots, SSL. (D) NanoBio Devices: Biosensor, Ion channel. Prerequisite: ECE 375 and ECE 345 or instructor consent.

551-3 Probability and Stochastic Processes for Engineers. (Same as Electrical Computer Engineering 521) Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes. Prerequisite: graduate student status.

552-3 Detection Theory. Signal detection in white and colored noise. Random waveforms. Matched filtering. Mary signal detection, nonparametric detection, sequential hypothesis testing, decision theoretic schemes. Applications in communication and radar signal processing. Prerequisite: 551 or consent of instructor.

553-3 Data Communications Network. High-speed data networks. TCP/IP and ATM platforms. Analysis of protocols. Congestion Control and Traffic Management. Performance Modeling. Queuing theory. Routing Algorithms. Data Compression. Prerequisite: 422 or consent of instructor.

554-3 Spread Spectrum Communication. Concepts of spread spectrum systems, frequency hopping, and direct sequence systems. Anti-jamming performance analysis, synchronization schemes, and systems with forward error correction. Prerequisite: 552 or consent of instructor.

555-3 Information Theory. Introduce the foundations of information theory as related to data compression and transmission of information. Contents: Entropy, block encoding, Huffman code, universal code, capacity, channel coding, Ergodic Theorem, Shannon-McMillan Theorem, rate-distortion theory, quantization, predictive coding, multi-terminal information networks. Prerequisite: 551 or Mathematics 480 or consent of instructor.

556-3 Digital Communications. Bandpass signals and systems characterization. Optimum receivers for detecting modulation signals in additive white Gaussian noise, block and convolutional code, communication through bandlimited channels. Prerequisite: 551 and Engineering 521 or consent of the instructor.

558-3 Digital Image Processing I. Basic concepts, scope and examples of digital image processing, digital image fundamentals, image sampling and quantization, an image model, relationship between pixels, enhancement in the spatial domain, enhancement in the frequency domain, image segmentation, basics of color image processing. Prerequisite: consent of instructor.

563-3 Estimation Theory and Filtering. Parameter estimation for deterministic systems: least-squares, projection and persistent excitation methods. State and parameter estimation of stochastic systems. Bayesian estimation theory, maximum likelihood and maximum a-posterior estimation. Optimal filtering. The Kalman recursive filter. Nonlinear estimation. Estimation bounds. Applications to communications and control. Prerequisite: 551 or consent of instructor.

564-3 Optimal Control. Optimization techniques for linear and nonlinear systems. Variational calculus. Dynamic programming. Pontryagin's maximum principle. Hamilton-Jacobi theory. Linear regulator. Bang Bang control, minimum time control, singular control. Discrete variational calculus. Combined estimation and control. Computational methods in optimal control. Prerequisite: 456 or consent of instructor.

565-3 Nonlinear Systems Analysis. Nonlinear systems, autonomous systems. Analytical approximation methods. Nonlinear differential equations. Stability of time-varying and nonlinear systems. Liapunov's method, input-output stability. Nonlinear discrete systems. Prerequisite: 456 or consent of instructor.

566-3 Adaptive Control. Adaptive systems and adaptation mechanisms. Error system models, direct and indirect adaptive control methods, self-tuning control, model reference adaptive control, variable structure adaptive control, robust control, learning control. Design techniques and applications. Prerequisite: 456 or consent of instructor.

567-3 Modern Biomedical Imaging. Modern biomedical imaging. Diagnostic x-ray projection imaging. Tomographic imaging. Ultrasound imaging and therapy. Magnetic resonance imaging (MRI). Signal and noise characteristics. Image quality evaluation. Three-dimensional image reconstruction algorithms. Prerequisite: ECE355 or consent of instructor.

568-3 Pattern Classification. Classification models, discriminant functions, decision surfaces, generalized linear discriminant functions, parameter estimation, problems of dimensionality, component analysis, Fisher discriminant analysis, hidden Markov models, nearest neighbor rules, classification trees, string matching, resampling for classifier design and evaluation, clustering algorithms, projects. Prerequisite: consent of instructor.

571-3 Wireless and Personal Communications Systems. Overview of wireless technologies, access technologies and cellular systems. Fundamentals of radio and cellular communications. Digital modulation techniques. Antennas and diversity systems. Concepts of packet radio systems. North American Cellular and PCS systems. Prerequisite: 551 or Mathematics 480 or 483 or consent of instructor.

572-3 Neural Networks. Anatomy and physiology of the cerebral cortex. Feed-forward Networks, Linear Associator, Multilayer Perceptrons. Feedback Networks, Hopfield Networks, ART. Applications to pattern recognition, robotics and speech processing. Optical and electronic implementations. Prerequisite: Mathematics 305 or consent of instructor.

573-3 Field and Waves II. Time-harmonic electromagnetic fields in dielectric and lossy media, transmission lines, antennas and resonators. Techniques include duality, image theory, reciprocity and integral equations. Boundary value problems solved for several frequently encountered symmetries. Prerequisite: 477.

574-3 Nonlinear Optics. Coupled-mode-analysis applied to nonlinear wave interactions, harmonic generation, parametric amplification, backward wave amplifiers, backward oscillation in laser systems, phase conjugation and multiple-wave mixing systems, Pockel and Kerr effects, and electro-optical modulations in optical communication systems. Prerequisite: 375 or consent of instructor.

576-3 Numerical Electromagnetics. Numerical solution of electromagnetic problems by methods that include finite element, integral equation, moment, spectral domain and finite difference. Examination of electromagnetic problems and their solutions in current literature. Prerequisite: 573.

577-3 Antenna II. Analysis, design and CAD of antennas. Numerical methods. Broadband, traveling-wave, frequency independent, electrically-small, aperture and microstrip antenna types. Prerequisite: 472.

578-3 Digital Image Processing II. Full-color image processing, image noise and degradation models, image restoration, inverse filtering, Wiener filtering, geometric transformations, image compression models, error-free compression, lossy compression, compression standards, dilation and erosion, opening and closing operations, morphological filtering, boundary descriptors, regional descriptors, principal components, vision-based pattern recognition. Prerequisite: 558.

579-3 Microwave Engineering II. Analysis and design of passive and active devices at microwave frequencies. Topics include: power dividers, couplers, filters, ferrite devices, noise, noise effects in detectors, mixers, modulators, amplifier and oscillator design, and an introduction to microwave systems. Prerequisite: 479.

580-1 Seminar. Study and formal presentation by student of selected research in electrical engineering. Prerequisite: enrollment in program leading to Master of Science in Electrical Engineering.

581-1 to 3 Wind Energy Power Systems. This course introduces graduate students to advanced configurations of wind energy power systems with an in-depth treatment of their control and protection. Wind speeds and power relations, basic design of wind power energy systems, synchronous and induction generators, power inverters, generator drives-control modes, interface with the power grid-system modeling, stability, control and protection. Special approval needed from the instructor.

582-3 HVDC Transmission. Development of HVDC technology. Static power conversion. Harmonic elimination. Control of HVDC systems. Interaction between AC and DC systems. Fault development and protection. HVDC systems based on the voltage sourced inverter. Prerequisite: 487 or consent of the instructor.

583-3 Advanced Applications of Power Electronic System. This course is a sequel of ECE 483 covering several advanced topics and applications in power electronics: State-of-the-art semiconductor devices for high power applications. Phase control and line commutation. Forced commutation, multilevel inverters. Advanced modulation

techniques for inverters, harmonic control. Power utility applications: HVDC, FACTS, AC drives and utility interface for wind and solar power systems. Prerequisite: ECE 483 or consent of the instructor.

584-3 Linear and Non-Linear Networks. Device modeling convex and concave elements. Network graphs graph matrices, formulation of circuit equations. Multi-port networks. State equations of non-linear circuit computer formulation. Advanced techniques for the numerical integration of the state equations. Transient properties of linear and non-linear circuits. Network functions. Sparse matrices. Numerical techniques applied to matrices. Prerequisite: 484 or consent of the instructor.

585-3 Power Systems Stability and Control. Fundamentals of power system stability, synchronous machine modeling and simulation, transient and small signal stability, control and protection, power system stabilizers, voltage stability, voltage collapse, concepts and devices of flexible ac transmission, mid-term and long-term stability. Prerequisite: 487.

586-3 Power Systems Analysis II. Techniques for solving power system problems. Network reduction. Load-flow, short-circuit, and transient-stability studies. Utilization of digital and analog computers. Prerequisite: 487.

587-3 Power System Operation and Control. Advanced mathematical and operations research methods applied to power systems such as economic dispatch, unit commitment, transmission losses, control of generation, power pools and power system security. Prerequisite: 488 or consent of instructor.

588-3 Advanced Electrical Network Theory. Graph theory. Steady-state solution of linear and nonlinear networks. Transfer function techniques. Sensitivity analysis for networks. Prerequisite: 484 or consent of instructor.

589-3 Planning and Automation of EL PWR DSTRB. Analysis and design of distribution networks. Economic planning. Distribution substations-substation planning. Optimum operation of distribution feeders. Distribution network automation. Control and protection. Distribution. Distribution system reliability. Prerequisite: 489 or consent of the instructor.

592-1 to 3 Special Investigations in Electrical Engineering. Individual advanced projects and problems selected by student or instructor. Prerequisite: graduate standing and consent of instructor.

593-1 to 3 Advanced Topics in Electrical Engineering. Lectures on advanced topics of special interest to students in various areas of Electrical & Computer Engineering. This course is designed to offer and test new experimental courses in electrical engineering. (a) Antennas and Propagation, (b) ASIC Design, (c) Communications, (d) Computer Architecture, (e) Control Systems, (f) Design Automation (g) Digital Design (h) Digital Testing and Verification (i) electromagnetic fields and waves (j) Embedded Systems (k) Medical Imaging (l) Mixed-signal testing and design (m) nanotechnology (n) Network systems (o) photon-

ics (p) Physical Design automation (q) Power Electronic Converters and Drive System (r) Power Quality (s) Power System control and protection (t) Renewable Energy (u) RF and Microwave Systems (v) Signal Processing (w) Software Engineering (x) Wireless Systems. Prerequisite: consent of instructor.

595-1 Technical Communications. Engineering communications including resumes, literature reviews, memos, letters, proposals, reports, specifications, user guides and oral presentations. Prerequisite: Graduate standing.

599-1 to 6 Thesis.

600-1 to 24 (1 to 16 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded S/U only. Prerequisite: Admission to PhD program in Electrical and Computer Engineering.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

ENGINEERING

www.engr.siu.edu/home.html

amalms@siu.edu

COLLEGE OF ENGINEERING- SIU Carbondale Faculty participating in the Engineering Science Ph.D. Program are listed under Civil Engineering, Electrical and Computer Engineering, Mechanical Engineering, and Mining Engineering.

COLLEGE OF ENGINEERING--SIU Edwardsville Faculty participating in the Engineering Science Ph.D. Program

Graduate Faculty:

Alkin, Oktay, Professor and *Chair, Department of Electrical and Computer Engineering-SIUE*, Ph.D., University of Alabama, 1986; 1986.

Chen, Jen-Shiun, Professor, Ph.D., Ohio State University, 1983;1986.

Cross, W. Bradford, Professor, Ph.D., The John Hopkins University, 1992; 1992.

Ehlmann, Bryan, Professor, Ph.D., Florida University, 1992; 2000.

Eneyo, Emmanuel S., Professor, Ph.D., Purdue University, 1991; 1989.

Engel, George, Associate Professor, D.Sc., Washington University; 1993.

Fujinoki, Hiroshi, Assistant Professor, Ph.D., University of Florida, 2001; 2001.

Gu, Keqin, Professor and *Chair, Department of Mechanical and Industrial Engineering-SIUE*, Ph.D., Georgia Institute of Technology, 1988; 1990.

Hubbard, Kevin, Associate Professor, Ph.D., University of Missouri-Rolla, 1996; 2001.

Karacal, S. Cem, Professor, Ph.D., Oklahoma State, 1991; 1993.

Krauss, Ryan, Assistant Professor, Ph.D., Georgia Institute of Technology, 2006; 2006.

Lee, H. Felix, Professor, Ph.D., The University of Michigan, 1989; 1989.

Luo, Albert C.J., Associate Professor, Ph.D., University of Manitoba, 1995; 1998.

Molki, Majid, Professor, Ph.D, University of Minnesota, 1982; 2000.

Morgan, Susan M., Associate Professor, Ph.D., Clemson University, 1995; 1996.

Rossow, Mark P., Professor and *Chair of Department of Civil Engineering-SIUE*, Ph.D., University of Michigan, 1973; 1979

Slattery, Kerry T., Assistant Professor, Ph.D., University of Mississippi, 1989; 1999.

Smith, Scott, Professor, Ph.D., University of Illinois, 1991; 1988.

Umbaugh, Scott, Professor, Ph.D., University of Missouri-Rolla, 1990; 1989.

Voun, Luis, Professor, Ph.D., University of Houston, 1984; 1985.

Weinberg, Jerry, Associate Professor and *Chair, Department of Computer Science-SIUE*, Ph.D., Vanderbilt University, 1996; 1996.

White, William, Professor, Ph.D., Ohio State University, 1989; 1996.

Wu, Trong, Professor, Ph.D., University of Louisiana at Lafayette, 1982; 1986.

Yan, X. Terry, Professor, Ph.D., University of California, 1993; 1993.

Yu, Xudong, Assistant/Associate Professor, Ph.D., Vanderbilt University, 1992; 1999.

Zhou, Jianpeng, Assistant Professor, Ph.D., University of British Columbia, 2003; 2002.

The College of Engineering offers graduate programs leading to the Master of Science degree in civil engineering, electrical engineering, mechanical engineering, mining engineering, and manufacturing systems and a Doctor of Philosophy degree in engineering science and electrical and computer engineering. To support these graduate programs, the college has well equipped laboratories and computer facilities that are housed in a modern engineering complex. Additional research opportunities and funding are provided through the Center for Advanced Friction Studies, Coal Research Center, the Materials Technology Center, and the Office of Research Development and Administration.

Doctor of Philosophy in Engineering Science

The Doctor of Philosophy degree in engineering science is available for four concentrations in four engineering departments. The areas of concentration are as follows:

Areas of Concentration

Civil and Environmental Engineering. Course offerings and research activities include water and wastewater treatments, hazardous and industrial waste treatment, geotechnical and geoenvironmental engineering, hydrologic and hydraulic design principles, sediment transport, water resources systems optimization, steel, concrete and masonry design, structural analysis, seismic design and analysis, engineering materials, and composites design.

Electrical and Computer Engineering. Courses offerings and research activities include antennas, circuits and systems theory, electromagnetics, robust and adaptive control, robotics, embedded control, MEMS, plasma processing, energy conversion, power systems, power electronics, pattern recognition, image processing, biomedical engineering, neural networks, optical computing, stochastic modeling, wireless communications, detection and estima-

tion theory, communication networks, mobile *ad hoc* networks, sensor networks, digital systems, programmable ASICs design, bioengineering, computer architecture, CMOS VLSI, fault tolerance, mixed signal testing and design, low power system design, hardware/software co-design, synthesis and verification of digital systems, physical design automation, and VLSI testing.

Mechanical Engineering and Energy Processes. Course offerings and research activities include mechanics, mechanical systems, fluid/thermal systems, material and chemical systems, air pollution control, mass and heat transfer, coal conversion, electrochemical processes, catalysis, thermal science, thermal systems design, combustion, internal combustion engines, chemical and biochemical processes, dynamics and vibrations, mechanical systems control, computational modeling and simulations, composite materials and ceramics, tribology, and micro- and nano-technology.

Mining and Mineral Resources Engineering. Course offerings and research activities in this area of concentration include rock mechanics and ground control, geological engineering, mineral and coal processing, surface and underground mining systems performance optimization, innovative mining systems, surface mine reclamation, insitu mining, mine environment and ventilation, coal bed methane reservoir engineering, carbon dioxide sequestration, and coal combustion byproduct utilization and management.

Admission and Retention

Regular Admission. Admission to the doctoral program requires a master's degree in engineering or its equivalent. Applicants for the doctoral degree must meet Graduate School admission requirements and be approved by the college graduate studies committee. This program requires a \$50.00 application fee that must be submitted with the application for Admission to Graduate Study in Engineering Science. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. In addition to Graduate School and other college requirements, the committee ordinarily requires a grade point average of 3.25 (4 point scale) in graduate level work. Applicants are required to submit GRE scores in support of their application for admission. Except for persons from English-speaking countries, international students are required to have a minimum TOEFL score of 550 (paper score) or 213 (computer score) or an IELTS score of 6.0 or higher for admission.

Upon admission to the doctoral program, an interim graduate adviser will be assigned for each student by the college associate dean. This adviser will be responsible with the student for planning the student's course work. The college graduate studies committee will be kept informed of the student's program of study.

Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than two incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Accelerated Entry. After at least two semesters in residence in an engineering M.S. program and after completing 18 hours of approved coursework, a student may petition for accelerated entry into the Ph.D. program. Such entry is permitted only in special circumstances to superior students who have exhibited evidence that he/she is prepared to begin the research activities of doctoral-level study. In addition, the student must have an undergraduate grade point average of 3.5 or higher, have GRE scores that are at or above the 45th percentile for the verbal component, 80th percentile of the quantitative component and 80th percentile for the analytical component or a combined total percentile score of 225 or higher and have a TOEFL score of at least 600 (paper score) or 250 (computer score), or an IELTS score of at least 6.5. In addition, the student must pass a college-administered qualifying examination.

Computer Science. Based on a memorandum of understanding signed between the College of Engineering and the College of Science, the Department of Computer Science can participate in the Engineering Science Ph.D. Program. The College of Engineering Ph. D. Committee reviews the applications and approves admissions. One of the participating Computer Science faculty serves on the Committee. An M.S. in Computer Science will be considered as a degree equivalent to an M.S. in Engineering for admission purposes. The student's Ph.D. committee will determine any makeup work that may be required.

Curriculum

A minimum of 26 semester hours of course work, including 2 hours of seminar, and 24 semester hours of dissertation research is required. The course work must be completed in 2 areas: area of concentration and program core. A student must complete a minimum of 15 hours of course work relevant to an area of concentration. The course work in the area of concentration is intended to provide depth in the student's area of research. The program core consists of 11 hours of course work. A dissertation must be completed in the student's area of research interest with the approval of the dissertation committee.

Program Core

The program core consists of 11 hours of course work: 6 hours in math, 3 hours in engineering or science and 2 hours of seminar. The math courses to choose from are: all 400 and 500, except MATH 400, 411, 412, 458, 480, 483, 511, 512, 513, and 516. The engineering courses to choose from are: ENGR 530—Engineering Data Acquisi-

tion: Theory and Practice, ENGR 540—Design of Engineering Experiments, ENGR 545—Advanced Numerical Methods in Engineering, ENGR 521—Probability and Stochastic Processes for Engineers. The science course could be any 400 or 500 level course in Computer Science, Physics, Chemistry or Geology, as approved by the student's advisor. The seminar course, ENGR 580, must be taken in two separate semesters, each time as one-hour course. It is suggested that the seminar classes be taken after the initiation of doctoral research or after candidacy is granted.

Guide for Core and Concentration Courses

- Only two 400-level courses (typically 6 hours) can be counted towards the minimum required 26 semester hours of course work.
- Special Investigation course can be taken under ENGR 590—Special Investigations in Engineering Science, and only 3 hours can be counted towards the minimum required 26 semester hours of course work.
- Students with an M.S. degree in Physics must take at least 9 hours of ENGR courses, one of which can be ENGR 590.
- Students with an M.S. degree in Physics from SIUC can substitute PHYS 500A and 500B Mathematical Physics for six hours of math requirement in program core.
- Transfer credit will normally be given for some of the graduate level courses suitable to the program upon review by the college Ph.D. Committee. Proficiency examinations may be authorized by the committee for areas in which questions of transfer credit arise. No credit will be given for industrial experience. A maximum of six hours of course work can be transferred in all cases due to residency requirement, which states that every student must complete at least 24 semester hours of approved course work at SIUC prior to taking the candidacy examination. Of the 24 hours, only 6 hours can be dissertation (ENGR 600) hours before candidacy.
- A student transferring credits from a master's program must have earned those credits over and above the required course work to obtain the M.S. degree in his/her institution. Credit cannot be transferred from master degrees obtained from international institutions.

Candidacy

A Ph.D. student must satisfy all Graduate School requirements to become a candidate. Acceptance to Ph.D. candidacy is contingent upon the completion of all courses, excluding the seminar, with A or B grades and successful completion of a written and an oral test in the student's area of concentration.

The examination in the area of concentration is organized and administered by the student's academic advisor. The candidacy examination committee consists of at least three faculty chosen by the advisor in consultation with the student. The committee has to be approved by the program

director before it conducts the examination. Normally, the examination can be conducted at any time during the year when classes are in session. In the written examination, the student is tested in at least two major topics of the area of concentration with an appropriate number of questions prepared by the members of the student's candidacy committee. Each student has to score at least 70% in each major topic test in order to successfully complete the written part of the candidacy examination. If a student fails to pass any topic test of the written examination, a second chance is given for the failed topic test. If a student does not successfully complete the written examination after two attempts, he/she will not be accepted to candidacy in the engineering science Ph.D. program. A student is qualified to take the oral examination only after successfully completing the written examination.

The oral examination is conducted within two weeks of the successful completion of the written examination. In the oral examination, the student is tested again in the area of concentration by at least three candidacy committee members. If a student fails to pass the oral examination in the first attempt, a second chance is given. If a student does not successfully complete the oral examination after two attempts, he/she will not be accepted to candidacy in the engineering science Ph.D. program.

After the completion of the concentration examination, copies of the graded tests, along with signoff sheets for both the written and oral examinations are submitted to the director of the Ph.D. program, who is also the Associate Dean of the College.

Dissertation

A dissertation must be written under the direction or co-direction of an engineering faculty member and approved by a dissertation committee consisting of a minimum of five members, one of whom must be from outside the College of Engineering. For students with computer science background the committee will be made up of at least six members, three cross-appointed Computer Science faculty members and three Engineering faculty members, with a chair from Computer Science and a co-chair from Engineering.

The dissertation adviser must be chosen by the end of the student's first academic year. The dissertation committee must be formed no later than immediately after successful completion of the candidacy examination. The members of this committee need not be the same as the members of the candidacy examination committee.

A dissertation research proposal must be approved by the dissertation committee. Candidates will be required to present an acceptable dissertation describing original research performed with minimal supervision.

Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation. This requires approval of at least 80 percent of the dissertation committee.

Graduation

1. All requirements of the Graduate School must be met.
2. A minimum of 26 hours of doctoral level course work must be completed with a minimum grade point average of 3.25.
3. An acceptable dissertation must be completed within five years after admission to candidacy or the student will be required to repeat the candidacy examinations.

Doctor of Philosophy in Electrical and Computer Engineering

See Electrical Engineering

Master of Science Programs

See Civil Engineering, Electrical Engineering, Manufacturing Systems, Mechanical Engineering, or Mining Engineering

Courses (ENGR)

521-3 Probability and Stochastic Processes for Engineers. Axioms of probability, random variables and vectors, joint distributions, correlation, conditional statistics, sequences of random variables, stochastic convergence, central limit theorem, stochastic processes, stationarity, ergodicity, spectral analysis, and Markov processes.

530-3 Engineering Data-Acquisition: Theory and Practice. Theory of data acquisition and measurement systems. Criteria for selection of data acquisition hardware and software, instruments, sensors and other components for scientific and engineering experimentation. Methods for sampled data acquisition, signal conditioning, interpretation, analysis, and error estimation.

540-3 Design of Engineering Experiments. Planning of experiments for laboratory and field studies, factorial designs, factorial designs at two levels, fractional factorial designs, response surface methods, mixture designs. Prerequisite: Mining Engineering 417, or Mathematics 483, or equivalent, or consent of instructor.

545-3 Advanced Numerical Methods in Engineering. Engineering applications of linear and nonlinear equations, eigenvalue problems, interpolation and approximating functions and sets of data, numerical solutions of ordinary and partial differential equations. Prerequisite: 222 or equivalent, 351 or equivalent, and Mathematics 305 or consent of instructor.

580-1 Seminar. Study and presentation of research topics from students' own specialty areas within engineering and science. Graded *S/U* only. Restricted to: enrollment in the Ph.D. in engineering science program or consent of instructor.

590-1 to 3 Special Investigations in Engineering Science. Investigation of individual advanced projects and problems selected by student or instructor. Prerequisite: admission into Ph.D. program in engineering science.

592-1 to 3 Engineering Cooperative Education. Supervised work experience in industry, government or in a professional organization. Work must be directly related to student's program of study. Student works with on-site supervisor and faculty advisor. Activity report is required from the student and performance report is required from the employer. Enrollment requires Chair's approval. Hours do not count toward degree requirements. Mandatory Pass/Fail. Prerequisite: graduate standing.

593-3 Special Topics in Engineering. Studies of various special topics in the area of engineering science. Prerequisite: Consent of instructor.

600-1 to 24 (1 to 16 per semester) Doctoral Dissertation. Dissertation research. Hours and credit to be arranged by director of graduate studies. Graded *S/U* only. Prerequisite: admission to Ph.D. in engineering science program.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

ENGLISH

www.english.siuc.edu/
gradengl@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Amos, Mark Addison, Associate Professor, Ph.D., Duke University, 1994; 1999.

Anthony, David J., Associate Professor and Director of Undergraduate Studies, Ph.D., University of Michigan, 1998; 1998.

Appleby, Bruce C., Professor, *Emeritus*, Ph.D., University of Iowa, 1967; 1967.

Benedict, Pinckney, Professor, M.F.A., University of Iowa Writers' Workshop, 1988; 2006.

Bennett, Paula B., *Emeritus*, Ph.D., Columbia University, 1970; 1991.

Bogumil, Mary L., Associate Professor, Ph.D., University of South Florida, 1988; 2001.

Boulukos, George E., Associate Professor, Ph.D., University of Texas at Austin, 1998; 2001.

Brunner, Edward J., Professor, Ph.D., University of Iowa, 1974; 1991.

Chandler, Anne K., Associate Professor, Ph.D., Duke University, 1995; 1995.

Cogie, Jane N., Associate Professor and Coordinator of the Writing Center, Ph.D., University of Iowa, 1984; 1991.

Collins, K. K., Associate Professor, Ph.D., Vanderbilt University, 1976; 1976.

Dively, Ronda L., Associate Professor and *Director of Writing Studies*, D.A., Illinois State University, 1994; 1994.

Donow, Herbert S., *Emeritus*, Ph.D., University of Iowa, 1966; 1966.

Dougherty, Jane Elizabeth, Assistant Professor, Ph.D., Tufts University, 2001; 2005.

Fanning, Charles, *Emeritus*, Ph.D., University of Pennsylvania, 1972; 1993.

Fox, Robert Elliot, Professor, Ph.D., SUNY at Buffalo 1976; 1991.

Friend, Jewell, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1967.

Gides, Jacinda Townsend, Assistant Professor, M.F.A., University of Iowa, 2001; 2006.

Goodin, George V., *Emeritus*, Ph.D., University of Illinois, 1962; 1966.

Griffin, Robert P., *Emeritus*, Ph.D., University of Connecticut, 1965; 1965.

Haruf, Kent A., *Emeritus*, M.F.A., University of Iowa, 1973; 1991.

Hatton, Thomas J., *Emeritus*, Ph.D., University of Nebraska, 1966; 1965.

Hillegas, Mark, *Emeritus*, Ph.D., Columbia University, 1957; 1965.

Howell, John M., *Emeritus*, Ph.D., Tulane University, 1963; 1963.

Humphries, Michael L., Associate Professor, Ph.D., The Claremont Graduate School, 1990; 1991.

Jones, Rodney G., Professor, M.F.A., University of North Carolina at Greensboro, 1973; 1984.

Jordan, Judy L., Associate Professor, M.F.A., University of Virginia, 1995; University of Utah, 2000; 2002.

Joseph, Allison E., Associate Professor, M.F.A., Indiana University, 1992; 1994.

Klaver, Elizabeth T., Professor, Ph.D., University of California at Riverside, 1990; 1991.

Kvernes, David M., *Emeritus*, Ph.D., University of Minnesota, 1967; 1968.

Lamb, Mary E., Professor, Ph.D., Columbia University, 1975; 1976.

Lawson, Richard A., Professor, *Emeritus*, Ph.D., Tulane University, 1966; 1963.

Light, James F., Professor, *Emeritus*, Ph.D., Syracuse University, 1953; 1979.

Little, Judy R., Professor, *Emerita*, Ph.D., University of Nebraska, 1969; 1969.

Lordan, E. Beth, Professor, M.F.A., Cornell University, 1987; 1991.

McClure, Lisa J., Associate Professor, D.A., University of Michigan, 1988; 1988.

McEathron, Scott J., Associate Professor and Director of Graduate Studies, Ph.D., Duke University, 1993; 1993.

Molino, Michael R., Associate Professor and *Chair*, Ph.D., Marquette University, 1991; 1998.

Moss, Sidney P., *Emeritus*, Ph.D., University of Illinois, 1954; 1964.

Nelms, R. Gerald, *Emeritus*, Ph.D., Ohio State University, 1990; 1990.

Netzley, Ryan, Assistant Professor, Ph.D., Pennsylvania State University, 2002; 2005.

Perillo, Lucia Maria, Associate Professor, M.A., Syracuse University, 1986; 1991.

Peterson, Richard F., *Emeritus*, Ph.D., Kent State University, 1969; 1969.

Riedinger, Anita R., *Emerita*, Ph.D., New York University, 1985; 1989.

Rudnick, Hans H., Professor, *Emeritus*, Ph.D., University of Freiburg, Germany, 1966; 1966.

Schönhorn, Manuel R., Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1963; 1968.

Simeone, William E., Professor, *Emeritus*, Ph.D., University of Pennsylvania, 1950; 1950.

Wells, Jeremy, Assistant Professor, Ph.D., University of Michigan, 2000; 2004.

Wiley, Dan, Assistant Professor, Ph.D., Harvard University, 2000; 2008.

Williams, Tony, Professor, Ph.D., University of Manchester, 1973; 1984.

Zimra, Clarisse, *Emerita*, Ph.D., University of Washington, 1974; 1988.

The Department of English offers programs leading to the Master of Arts and the Doctor of Philosophy degrees with a major in English and to the Master of Fine Arts in Creative Writing. Students enrolled in a program leading to the Master of Science in Education degree in secondary education or higher education may take courses in English to satisfy requirements for the teaching specialty. Students enrolled in the Ph.D. degree in education program may take courses in English for the elective portion of the program when permitted by the specific department participating in the degree.

Admission

Students seeking admission to the graduate program in English must first be admitted by the Graduate School before they can be admitted to the Department of English.

Students seeking admission to the M.A. degree program are strongly advised to take the General and Subject tests of the Graduate Record Examination, especially those students wishing to compete for fellowship support. Those seeking unconditional admission to the Doctor of Philosophy degree program must take the General and Subject tests of the Graduate Record Examination and present a score of the 70th percentile or above in the Subject test. Information about admission and the necessary admission forms to the graduate programs in English may be obtained by calling (618-453-5321) or by writing: Director of Graduate Studies, Department of English, Southern Illinois University Carbondale, Carbondale, IL 62901-4503. E-mail: gradengl@siu.edu

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in English. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Transfer Credit

Within limits imposed by the Graduate School, transfer credits will be accepted by the Department of English subject to the following restrictions.

The student must petition the Director of Graduate Studies giving the following information: the number and level of hours being submitted for credit, where and when the work was done, the grade received, and course descriptions and syllabi. As nearly as possible, the course to be transferred should be equated with a course offered by the SIUC Department of English. An appropriate faculty member will recommend whether the transfer credits should be accepted and whether the course satisfies the course distribution requirements of the department. The Director of Graduate Studies will forward a recommendation to the proper authorities.

Retention

In the entire graduate program, the student may accumulate up to 3 hours of work below *B*, so long as a 3.0

M.A. or 3.25 Ph.D. average is maintained. If the student has accumulated more than 3 hours, but fewer than 10 hours, of grades below *B*, these must be replaced by an equal number of hours of *A* or *B* in addition to maintaining the required average. That is, the minimum number of semester hours of course work may be increased from 30 to a maximum of 36. A student who accumulates more than 9 hours of *C* will be dropped from the program.

A student who is granted a deferred or incomplete grade must complete the work by the end of the next term in residence. Exception to this rule will be made only in a very special case and must be made through petition to the Graduate Studies Committee. A student who has accumulated more than 6 hours of such work will not be allowed to register for more course work until the total of deferred work is reduced to not more than 3 semester hours. Deferred or incomplete work will be regarded as finished when a student has submitted all examinations, papers, etc., to the instructor. Deferred or incomplete grades in ENGL 595, 600, and 601 are not included in the above regulations.

Course Work

Students may offer work from outside the department (in a single field or in two or more related fields) toward the Master of Arts, the Master of Fine Arts, or the Ph.D. degree provided that the work does not interfere with regular requirements of the Department of English and has relevance to their program.

Master of Arts Degree

The English Department offers three areas of concentration at the master's level: 1) Literature, 2) Rhetorical and Composition, and 3) English Studies. The Master of Arts degree in English with a concentration in Literature or Composition and Rhetoric requires satisfactory completion of 30 semester hours, of which 15 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students must satisfy the following requirements:

1. Core courses.

Four literature courses: two from Group I, representing two different historical periods; and two from Group II, representing two different historical periods — 12 hours

Group I:

- (a) Old and Middle English literatures
- (b) Renaissance and 17th Century English literature
- (c) Restoration and 18th Century English literature
- (d) 19th Century English literature

Group II:

- (a) American literature before 1900
- (b) American literature since 1900
- (c) Modern British literature
- (d) Modern Continental literature

2. Concentrations. Satisfactory completion of one of the concentrations detailed below.

3. Foreign Language. This requirement may be satisfied by completing, with an average not less than *B*, two years

of college-level work in one foreign language or FL 488, a research-tool course, or ENGL 402 plus ENGL 506 (*Beowulf*), or the equivalent. Equivalent work will be judged on an ad-hoc basis by the Director of Graduate Studies.

4. Research paper/thesis. This requirement may be satisfied either by submitting to the Director of Graduate Studies two copies of a research paper which has received a grade of not less than *B* in a 500-level English course (a rhetoric/composition course for students in that concentration), or by taking English 599 (3 hours) and writing an acceptable thesis.
5. Final examination. This requirement must be satisfied as specified below.

Literature Concentration

1. English 401 or 402 or 403—3 hours
2. Two additional literature courses so that a student has covered three periods in Group I and three periods in Group II—6 hours
3. Electives should include a literary criticism/theory course and may include English 599 — 6 hours
4. Satisfactory completion of a written examination over six historical periods and a reading list. If a student writes a thesis, the examination is oral over the thesis and course work.

Rhetoric & Composition Concentration

1. English 401 – 3 hours
2. English 596 – 3 hours
3. English 597 – 3 hours
4. One of the following (3 hours)
5. English 501, English 581, English 490, English 491, or an appropriate special topics course (this decision is to be made in consultation with the Area Head of Rhetoric & Composition).
6. English 599 (3 hours)
7. Satisfactory completion of a thesis and an oral examination over the thesis and coursework.

English Studies Concentration

The Master of Arts degree in English with a concentration in English Studies requires satisfactory completion of 36 semester hours, of which 18 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students in the English Studies concentration must satisfy the following requirements:

1. Core Courses: At least one course from seven of the following areas:
 - (a) Language and Grammar Studies
 - (b) Old/Medieval English Literature
 - (c) Renaissance/17th Century British Literature
 - (d) Restoration/18th Century British Literature
 - (e) 19th-Century British Literature
 - (f) Early American Literature
 - (g) Modern American Literature
 - (h) Modern British Literature
 - (i) Modern Continental Literature

(j) Composition and Rhetoric

2. Electives: 15-credit-hours, up to nine hours may be taken outside the English Department.
3. Final Examination: Satisfactory completion of an oral examination over coursework.

Students in the English Studies concentration may request a graduate assistantship provided they receive all GA training required by the English Department. Priority, however, is given to students in the other two areas of concentration because those areas of concentration are designed to meet the specific needs of students preparing to teach at the college or university level.

Master of Fine Arts Degree

The Master of Fine Arts in Creative Writing requires satisfactory completion of 48 semester hours, of which 15 must be earned in 500-level courses at Southern Illinois University Carbondale.

All students must satisfy the following requirements:

1. Core courses:
 - English 592—20 hours
 - English 594—4 hours
2. Recommended and elective courses:
 - As prescribed by the creative writing faculty—15 hours
3. Thesis:
 - English 599—6 hours
4. Final oral examination over thesis and course work.

Doctor of Philosophy Degree

Students must apply formally for admission to the Doctor of Philosophy degree program, including students who have earned a master's degree at SIUC. Admission to the Ph.D. program is decided by the Graduate Studies Committee, which makes its decision according to the following criteria:

1. An M.A. degree in English or its equivalent
2. Appropriate grade-point average (normally, a 3.25 is the acceptable minimum)
3. A satisfactory score on the GRE advanced literature examination (normally the 70th percentile will constitute an acceptable minimum score)

A full-time student holding a master's degree can complete the doctoral program in two years, though most prefer three. Students are considered Ph.D. candidates when they have (1) completed the prescribed course of study, (2) satisfied the research-tool requirements, (3) passed preliminary examinations, and (4) been recommended by the English graduate faculty. The Graduate School recognizes students as Ph.D. candidates after it receives notification that the students have passed preliminary examinations. Students must be admitted to candidacy at least 6 months prior to the final examination on the dissertation.

Accelerated Entry into the Ph.D. Degree Program

A student enrolled in the M.A. degree program may petition the Graduate Director after 2 semesters in residence for waiver of the requirement of the M.A. degree as

prerequisite for admission to the doctoral program and for direct entry into the Ph.D. in accordance with the following conditions. First, the student must be an exceptional graduate student whose outstanding academic achievements must be supported by a wide range of conclusive evidence including, but not restricted to, the G.P.A., G.R.E. scores, M.A. degree research tool requirement, and evaluative letters from graduate instructors. Second, the student must present one graduate research paper of outstanding quality, or a published article of appropriate quality, or the equivalent for the departmental files. The petition shall be presented to the Graduate Studies Committee for approval. If accelerated entry is granted, the student will proceed toward the Ph.D. degree in accordance with the established rules of the department and the Graduate School. Students admitted into the Ph.D. program under the accelerated entry option will have to fulfill all M.A. degree requirements as part of the Ph.D. degree work, but will not receive the M.A. degree.

Course of Study

There is no prescribed number of hours for the Ph.D. degree in English. Required courses are as follows:

1. A pro-seminar to be taken in the first year of doctoral study;
2. Two graduate courses in literary theory or rhetorical theory or cultural studies;
3. Any courses prescribed by a student's advisory committee to ensure appropriate knowledge of a major area and 2 minor areas, normally with at least one 500-level course completed for credit, with no grade lower than B, in each minor area.

Research Tool Requirements

A student may satisfy the research tool requirement by fulfilling 1 of the 2 options listed below. The choice of

option and languages selected must be approved by the student's advisory committee.

1. Command of one language demonstrated by examination in the Foreign Language Department. International students may specify their native language as long as they demonstrate fluency in English as well, or
2. Reading knowledge of one foreign language demonstrated by a minimum three years course work (or its equivalent) at the college level in one language with a no grade lower than a "B." Students who take FL 488 (or its equivalent) are required to take at least two more courses at the 300- or 400-level in the same language.

The department has expanded its Ph.D. program into interdisciplinary studies on a cooperative basis with departments that deal with one pertinent subject matter and which are interested in such interdisciplinary cooperation, e.g., the Departments of Philosophy, Foreign Languages and Literatures, History, Cinema and Photography, Speech, Theater, Sociology, etc. Permission for an interdisciplinary minor must be approved by the student's committee and the Graduate Studies Committee.

Preliminary Examination: Students on a fellowship or a graduate assistantship will be expected to take preliminary examinations no later than 2 or 3 years, respectively, after receipt of their M.A. degree.

Preliminary examinations covering 3 areas are prepared and graded by the student's advisory committee. A major area examination consists of one 6 hour written exam, the minor areas of two 3 hour written exams. Preliminary examinations will be scheduled only twice in a single term.

At the discretion of the committee, a 2 hour oral examination may follow the decision on the written examinations.

Courses (ENGL)

Students desiring to enroll in 400- and 500- level courses must have been admitted to the M.A. or Ph.D. degree program in English or must have permission of the Director of Graduate Studies in English

401-3 Modern English Grammars. Survey of the structure of English, with emphasis on phonetics and phonology, morphology, syntax, semantics, pragmatics, grammar instruction, stylistics and language variation. Specifically designed to meet the needs of prospective teachers of composition and language arts at the secondary and college levels.

402-3 Old English Language and Literature. Introduction to the language, literature and culture of Anglo-Saxon England, with emphasis on Old English heroic and elegaic poetry, exclusive of *Beowulf*.

403-3 History of the English Language. The development of the language from its Indo-European roots

through Early Modern English and selected American dialects. Emphasis on the geographical, historical and cultural causes of linguistic change.

404A-3 Medieval Allegory, History and Romance. Three popular medieval genres as represented by major texts of the early through the late Middle Ages, exclusive of Chaucer, including works such as *Dream of the Rood*, *Sir Orfeo*, *Sire Gawain and the Green Knight*, *Piers Plowman*, *The Book of Margery Kempe* and selections from *Lawman's Brut* and Malory's *Le Morte Darthur*.

404B-3 Medieval Lyric, Ballad and Drama. Lyric, ballad and drama from the early through the late Middle Ages, including translations of the Old English *Wife's Lament*, *Husband's Message*, *Wanderer* and *Seafarer*, as well as Middle English religious and love lyrics and the Robin Hood ballads, with special emphasis on the great plays of the

fifteenth century and the rebirth of drama in the Western World.

405-3 Middle English Literature: Chaucer. Major works, including *Troilus and Criseyde* and selections from *The Canterbury Tales*.

412-3 English Non-Dramatic Literature: The Renaissance. Topic varies, but usually lyric poets, especially 17th-century metaphysical poets such as Donne, Herbert and Marvell.

413-3 English Non-Dramatic Literature: The Restoration and Earlier Eighteenth Century. Major works of Dryden, Pope and Swift, and the non-dramatic specialties of Behn, Addison and Steele.

414-3 English Non-Dramatic Literature: The Later Eighteenth Century. Major poets from Thomson to Blake, and major prose writers, with emphasis on Johnson, Boswell and their circle.

421-3 English Romantic Literature. Wordsworth, Coleridge, Byron, Shelley, Keats and other writers of the era.

422-3 Victorian Poetry. Tennyson, Browning, Arnold, and other poets in England.

423-3 Modern British Poetry. Major modernists: Yeats, Eliot, Pound; with selected works of Auden, Owen, Thomas, Heaney and others.

424-3 Native American Verbal Art (Same as ANTH 424)
This class examines the oral traditions (story-telling, poetry, song, chant, etc.) of Native American Peoples. This class focuses on the ways that Native American verbal art has presented/represented by outsiders as well as on formal features and forms of Native American verbal art. Attention is paid to the place and structure of verbal art in Native societies. This class focuses on the broad spectrum of verbal art in North America.

425-3 Modern Continental Poetry. Representative poems by major 20th century poets of France, Italy, Germany, Spain, Russia, and Greece.

426-3 American Poetry to 1900. Trends and techniques in American poetry to 1900.

427-3 American Poetry from 1900 to the Present. The more important poets since 1900.

433-3 Religion and Literature. Introduces students to the study of religious meaning as it is found in literature.

436-3 Major American Writers. Significant writers from the Puritans to the present. May be repeated only if topic varies and with consent of the department.

437-3 American Literature to 1800. Representative works and authors from the period of exploration and settlement to the Federal period.

445-3 Cultural Backgrounds of Western Literature. A study of ancient Greek and Roman literature, Dante's *Divine Comedy*, and Goethe's *Faust*, as to literary type and historical influence on later Western writers.

446-3 Caribbean Literature. Representative texts from drama, poetry and fiction that have shaped black diaspora

aesthetics in the Caribbean, with special reference to black literature of the North American continent.

448A-3 Irish Literature Survey. An introductory survey in historical context of the literature of Ireland, including Gaelic literature in translation from the early Christian era (400 AD) to the late eighteenth century; the first two centuries of Irish literature in English (18th and 19th century); and the Celtic Twilight and the Irish Literary Renaissance.

447-3 African Literature. Selected works of poetry, drama, and fiction by modern African authors.

448B-3 Irish Literature Survey. An introductory survey in historical context of the literature of Ireland, including Gaelic literature in translation from the early Christian era (400AD) to late 18th century; the first two centuries of Irish literature in English (18th and 19th century); and the Celtic Twilight and the Irish Literary Renaissance.

448B-3 Irish Literature. Major works, authors, genres, periods, or movements within Irish Literature. Topics will vary (i.e., Irish Women Writers, Joyce and Yeats, The King Tales, 19th Century Irish Writers, the Celtic Twilight, Contemporary Irish Poets, etc.), providing in-depth study in particular areas within the 16 centuries of Irish Literature.

451-3 Eighteenth Century English Fiction. The novel from Defoe to Jane Austen, including works by Fielding, Richardson and others.

452-3 Nineteenth Century English Fiction. The Victorian novel from 1830, including works by the Brontës, Dickens, George Eliot, Thackeray and others.

453-3 Modern British Fiction. Major writers (including Conrad, Joyce, Woolf, and Lawrence) with selected fiction from mid-century and later.

455-3 Modern Continental Fiction. Selected major works of European authors such as Mann, Silone, Camus, Kafka, Malraux, Hesse.

458-3 American Fiction to 1900. Trends and techniques in the American novel and short story.

459A-3 American Prose from 1900 to Mid-century: The Modern Age. Representative narratives from the turn of the century to the post-World War II period.

459B-3 American Prose from Mid-century to the Present: The Postmodern Age. Representative narratives from the post-World War II period to the present.

460-3 Elizabethan and Jacobean Drama. Elizabethan drama excluding Shakespeare: such Elizabethan playwrights as Greene, Peele, Marlowe, Dekker; and Jacobean drama: such Jacobean and Caroline playwrights as Jonson, Webster, Marston, Middleton, Beaumont and Fletcher, Massinger, Ford, Shirley.

462-3 English Restoration and 18th Century Drama. After 1660, representative types of plays from Dryden to Sheridan.

464-3 Modern British Drama. Major writers (including Shaw and Synge), with selected works of later dramatists such as Churchill and Bond.

465-3 Modern Continental Drama. The continental drama of Europe since 1870; representative plays of Scandinavia, Russia, Germany, France, Italy, Spain and Portugal.

468-3 American Drama. The rise of drama, with emphasis on the 20th century.

469-3 Contemporary Topics in Drama. Varying topics on cross-national and cross-cultural 20th-century drama with focus on theoretical issues.

471-3 Shakespeare: The Early Plays, Histories, and Comedies. Such plays as *A Midsummer Night's Dream*, *The Merchant of Venice*, *The Taming of the Shrew*, *Henry IV Part I*, *Henry V*, and *Much Ado about Nothing*. Satisfies CoLA Writing-Across-the-Curriculum requirement for English majors.

472-3 Shakespeare: The Major Tragedies, Dark Comedies and Romances. Such plays as *Hamlet*, *Macbeth*, *Othello*, *King Lear*, *Measure for Measure*, *The Winter's Tale* and *The Tempest*.

473-3 Milton. A reading of a selection of the minor poems, of *Paradise Lost*, *Paradise Regained*, *Samson Agonistes*, and the major treatises.

481-3 Young Adult Literature in a Multicultural Society. Introduction to the evaluation of literary materials for junior and senior high school, with emphasis on critical approaches and the multicultural features of schools and society.

485A-3 Teaching Writing and Language in the Secondary School. Introduction to strategies for teaching English in the secondary school with emphasis on writing and language. Ideally, course should be taken semester prior to student teaching. Restricted to: admittance to Teacher Education Program through CoEHS.

485B-3 Teaching Reading and Literature in the Secondary School. Introduction to strategies for teaching English in the secondary school with emphasis on critical reading skills and various genres of literature, including contemporary adolescent literature. Ideally, course should be taken semester prior to student teaching. Restricted to: admittance to Teacher Education Program through CoEHS.

489-3 One-to-One Teaching Practice and Theory. Perspectives on one-to-one teaching practices and collaborative theory in hands-on Writing Center experience. Prerequisites ENGL 101 and 102.

490-3 Expository Writing. Advanced composition with emphasis on a variety of rhetorical strategies. Prerequisite: English 290, 390, or equivalent.

491-3 Technical Writing. Introduction to technical communication; open to entire university community. Training also provided for students interested in teaching technical writing. Prerequisite: English 290, 291, 390, 391, or equivalent.

492A-3 Creative Writing Seminar: Fiction. Instruction in advanced writing of fiction. A directed written project in fiction will be submitted at the end of the semester. A collection of short stories or novel of what instructors

consider to be acceptable quality will fulfill the seminar requirement. Prerequisite: consent of department.

492B-3 Creative Writing Seminar: Poetry. Instruction in advanced writing of poetry. A directed written project in poetry will be submitted at the end of the semester. A collection of poems of what instructors consider to be acceptable quality will fulfill the seminar requirement. Prerequisite: consent of department.

492C-3 Creative Writing Seminar: Literary Nonfiction. Instruction in advanced writing of literary nonfiction prose. A directed written project in literary nonfiction prose will be submitted at the end of the semester. A collection of nonfiction work of what instructors consider to be acceptable quality will fulfill the seminar requirement. Prerequisite: consent of department.

493-3 to 9 (3 per topic) Special Topics in Literature and Language. Topics vary and are announced in advance; both student and faculty suggest ideas. May be repeated as the topic varies.

494-3 Culture Analysis and Cinema. Cultural studies exploring various and selected topics in European and American cinema. A \$10 screening fee is required.

495-3 A Survey of Literary Criticism. Introduction to the history of criticism and major recent schools of literary criticism and theory.

498-3 to 9 Internships. For English majors only. Student may take up to nine semester hours to receive credit for internships that may be available at SIU Press, Special Collections, University Museum, Coal Center, Writing Center, Computer Lab and other faculty or unit-sponsored projects. Prerequisite: being an English major.

499-1 to 6 (1 to 3, 1 to 3) Readings in Literature and Language. For English majors only. Prior written departmental approval required. May be repeated as the topic varies, up to the maximum of six semester hours.

500-3 Proseminar. Research methodology involved in writing a critical or scholarly work on literary topics for doctoral students in literature. Prerequisite: Enrollment in English graduate degree program.

501-3 Research in Composition. Seminar in qualitative and quantitative research methods in composition and its teaching. Prerequisite: enrollment in English graduate degree program or consent of department.

502-3 Introduction to Graduate Study and Teaching College Composition. An introduction to methods and materials related to the teaching of basic compositional skills on the college level. This course is required of all graduate assistants who have no previous college teaching experience or no familiarity with basic research techniques.

503-2 Professional Development for Teachers of Composition. Theory and practice for teaching composition in teacher-centered, workshop, discussion, and computer courses. Prerequisite: Enrollment in English graduate degree program.

506-3 to 12 Old and Middle English Studies. Seminars on various topics from Old and Middle English literature. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

510-3 to 12 Renaissance Studies. Seminars in varying topics concerned with the literature of the 16th and 17th centuries and the drama of Shakespeare. May be repeated only with different topics and the consent of the department.

516-3 to 12 Restoration and 18th Century Studies. Seminars in varying topics concerning the literature of the period. May be repeated only with different topics and the consent of the department.

530-3 to 12 19th Century English Literature. Seminars in various topics concerning the literature of the Romantic and Victorian periods. May be repeated only with different topics and the consent of the department.

533-3 to 12 American Literature Before 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

539-3 to 12 American Literature After 1900. Seminars in varying topics. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

550-3 to 12 Modern British Literature. Seminars in varying topics concerning Modern British literature. May be repeated only with different topics and the consent of the department.

555-3 to 12 Irish Studies. Seminars on varying topics in Irish and Irish immigration studies; interdisciplinary/cultural studies approaches. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

579-3 to 12 (3 per topic) Studies in Modern Literature. May be repeated only if the topic varies, and with consent of department.

581-3 to 9 (3 per topic) Problems in Teaching English. May be repeated only if the topic varies, and with consent of department.

582-3 Issues in Writing Program Administration. Seminars in varying topics concerning writing program administration. May be repeated only with different topics and the consent of department.

5831 -3 Internship in Writing Program Administration. An internship in WPA builds on four components: readings, activities or job tasks, written tasks, and a portfolio of artifacts and reflections representing the experience. These internships provide opportunities for interested students to implement practically what they are learning through research and reading.

589-3 to 12 Readings in Literature and Language. For English graduate students only. Prior written departmental approval required. May be repeated as the topic varies.

591-3 to 9 Seminar in Literary Nonfiction. Critical reading and analysis of one of the major forms of literary nonfiction (biography, autobiography, popular science, the essay, literary journalism, and travel narratives). May be repeated only with different topics and the consent of the department. Prerequisite: consent of instructor.

592-4 Creative Writing Seminar. Advanced workshops offered in both fiction and poetry. Class content derives primarily from student's work. Genre announced in advance. May be repeated with consent of department. Prerequisite: enrollment in English MFA program or consent of department.

593-3 to 12 Special Topics. Seminars in varying topics concerning language and literature. May be repeated only with different topics and the consent of the department.

594-4 Contemporary Literature Seminar. Advanced seminars offered in both contemporary poetry and contemporary fiction. Taught by creative writers and designed for students concentrating in creative writing. Prerequisite: enrollment in English MFA program or consent of department. May be repeated for credit with different section numbers.

595-1 to 9 Independent Readings. Preparatory for preliminary examinations for doctoral students in English. May be taken once only, grade of *S/U*, according to the result of the preliminary examination.

596-3 to 12 Language Studies. Seminars in varying topics concerning rhetoric, grammar and literacy. May be repeated only with different topics and the consent of the department. Prerequisite: enrollment in English graduate degree program or consent of department.

597-3 Composition Theory. Historical and analytical approaches to theories of discourse, theories of composing and theories of pedagogy. Prerequisite: 502 or equivalent.

598-3 to 12 Studies in Issues of Literary Theory. Seminars on various issues of literary theory. May be repeated only with different topics and the consent of the department.

599-3 Thesis. For Masters' students who elect to write a thesis in lieu of one three hour graduate course. Prerequisite: successful completion of 15 hours of graduate work on the Master's degree and consent of the thesis director.

600-1 to 36 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

ENVIRONMENTAL RESOURCES AND POLICY

<http://info.erp.siu.edu/>
enviro@siu.edu

GRADUATE SCHOOL, COLLEGES OF AGRICULTURAL SCIENCES, LIBERAL ARTS, AND SCIENCE

The Graduate School offers the Doctor of Philosophy degree in Environmental Resources and Policy. This degree provides students with an interdisciplinary education in natural resource and environmental processes with a perspective on public policy and social institutions that shape societal and individual reactions to environmental issues. The education will prepare students to work with multifaceted environmental problems and enable them to carry out interdisciplinary scientific research and be qualified for high-level administration positions in academia, government (e.g. U.S. Geological Survey, U.S. EPA, U.S. Forest Service, Illinois Dept. of Natural Resources, U.S. Department of Agriculture), and the private sector (e.g. environmental consulting firms, electric and water utilities, mining and solid waste firms). This will enable graduates to address the most compelling and daunting challenge in natural resource and environmental issues—identifying and solving problems that cross disciplinary boundaries.

The Environmental Resources and Policy Ph.D. is organized by the Departments of Geography and Environmental Resources, and Geology, and the College of Agricultural Sciences (Departments of Agribusiness Economics, Forestry, and Plant, Soil and Agricultural Systems). The School of Law and the College of Engineering also cooperate in the program.

Areas of Concentration

EARTH AND ENVIRONMENTAL PROCESSES

Students who select this specialization combine elements of the modern, process-oriented geology curriculum (sedimentology, geomorphology, petrology, basin analysis, seismology, potential-field geophysics, organic and water geochemistry, tectonics, and paleo-environmental analysis) with allied disciplines to prepare for research into a broad range of environmental studies. This concentration emphasizes the geological process approach to analysis of such problems as flooding, earthquake hazards, land-use practices, aquifer degradation, and mine site remediation.

ENERGY AND MINERAL RESOURCES

Energy and mineral resources include hydrocarbons (oil, natural gas, coal, and their naturally-occurring and manufactured derivatives), and both metallic and non-metallic (industrial) mineral and rock deposits. This specialization comprises studies of the origins and physical occurrences of these resources, together with technologies and policies concerning their extraction and use.

ENVIRONMENTAL POLICY AND ADMINISTRATION

Making and administering environmental policy has become an exceedingly complex arena where science interacts strongly with law and the political process. Students enrolled in this concentration will examine these interactions and complexities with a focus on the socioeconomic driving forces that generate resource use and attendant environmental problems, and the political and legal frameworks through which societies make and implement public policy in the environmental field.

FORESTRY, AGRICULTURAL, AND RURAL LAND RESOURCES

Many environmental problems, challenges and policies take place on rural landscapes where forestry and agricultural land uses are intermingled with non-farm rural residents and others. Many rural land uses contribute to environmental problems and the development of environmentally benign and sustainable methods of production are goals of environmental policy. Consequently, through this concentration, students will examine the interaction among environmental quality, production, and the process and institutions of public policy.

GEOGRAPHIC INFORMATION SYSTEMS, REMOTE SENSING AND ENVIRONMENTAL MODELING

Modern environmental sciences, management and planning rely on acquisition, analysis and integration of large data bases using remote sensing, digital image processing, geographic information systems and environmental modeling. The purpose of this concentration is to enable students to develop high skills in these areas and to apply them to one or more natural resource domains (e.g., hydrogeology, forest inventory, spatial decision support systems, environmental modeling).

WATER RESOURCES

As a critical flow resource, water is of central importance to society and, through hydrologic processes, is involved in many environmental issues from water shortages in populous arid regions to ground water quality concerns associated with agri-chemical use. Through this concentration, students will examine the interaction among hydrologic processes, environmental quality, water resource use, and the processes and institutions of the private sector and public policy that govern water resources.

Environmental Resources & Policy Faculty

Please see the departmental web pages (<http://www.siu.edu/siuc/iiffv/>) for detailed information on the research activities of individual faculty members. Please also see the departmental entries in this catalog.

Agribusiness Economics:

Altman, Ira, *Agribusiness Economics*, Renewable Energy Industries, Organizational, Rural and Regional Economics
Beaulieu, Jeffrey, *Agribusiness Economics*, Quantitative Methods, Rural land use
Eberle, Phil, *Agribusiness Economics*, Farm Management
Harris, Kim, *Agribusiness Economics*, Agricultural Finance, Agricultural Management
Kraft, Steven, Emeritus, *Agribusiness Economics*, Agricultural Policy, Soil and Water Conservation
Moon, Wanki, *Agribusiness Economics*, Consumer Economics and Food Marketing
Rendleman, Matthew, *Agribusiness Economics*, Agricultural Policy
Sanders, Dwight, *Agribusiness Economics*, Futures and options, Risk Management, Price Analysis
Schoonover, Jon, *Agribusiness Economics*, Watershed Management and Hydrology
Secchi, Silvia, ER&P Co-Director, *Agribusiness Economics*, Environmental and Energy Economics, Land Resource Development

Forestry:

Burde, John, Emeritus, *Forestry*, Recreational and Public Land Use
Carver, Andrew, *Forestry*, Land Use Planning, GIS
Groninger, John, *Forestry*, Silviculture
Phelps, John, Emeritus, *Forestry*, Forest Products Marketing, Wood Science
Ruffner, Charles, *Forestry*, Forest ecology
Williard, Karl, *Forestry*, Hydrological Modeling, Watershed Management
Zaczek, James, *Forestry*, Ecology

Geography and Environmental Resources:

Duram, Leslie, *Geography and Environmental Resources*, Agricultural Conservation Policy, Public Lands Policy, Organic Agriculture
Dziegielelewski, Benedkyt, *Geography and Environmental Resources*, Water Resources Planning, Hydrology
Lant, Christopher, ER&P Co-Director, *Geography and Environmental Resources*, Water Resources and Wetlands Policy, Non-point Source Pollution
Oyana, Tonny, *Geography and Environmental Resources*, GIS and GIScience
Justin Schoof, *Geography and Environmental Resources*, Climatology
Therrell, Matthew, *Geography and Environmental Resources*, Dendrochronology, Paleo-climatology, Biogeography, Water Resources
Wang, Guanxing, *Geography and Environmental Resources*, Remote Sensing, Spatial Statistics and GIS

Geology:

Anderson, Ken, *Geology*, Organic Geochemistry
Conder, James, *Geology*, Seismology, Plate Boundary Processes-Geodynamics and Seismotectonics
Esling, Steven, ER&P Co-Director, *Geology*, Hydrogeology, Environmental Modeling
Ferre, Eric, *Geology*, Structural Geology, Rock Magnetism, Tectonics
Firerek, Richard, *Geology*, Economic Geology, Mining Issues
Ishman, Scott, *Geology*, Marine Micropaleontology
Lefticariu, Liliana, *Geology*, Stable Isotope Geochemistry/Aqueous Geochemistry/Radiation chemistry.
Marzolf, John, *Geology*, Sedimentology
Pintar, Nicholas, *Geology*, Environmental Geology, Geomorphology, GIS, Environmental Modeling
Rimmer, Sue, *Geology*, Petrology of Coal and Dispersed Organics; Coal Geology and Geochemistry
Sexton, John, *Geology*, Seismology

Plant, Soil and Agricultural Sciences:

Baer, Sara, *Plant Biology*, Ecosystem, Soil and Restoration Energy
Bond, Jason, *PSAS*, Hematology and Plant Pathology
Chong, She-Kong, Emeritus, *PSAS*, Soil Physics, Hydrology, Soil and Water Conservation, Groundwater Contamination
Diesburg, Kenneth, *PSAS*, Turf and Forage Management
Henry, Paul, *PSAS*, Ornamental Horticulture
Klubek, Brian, *PSAS*, Soil Microbiology
Lightfoot, David, *PSAS*, Biotechnology Applications
Meksem, Khalid, *PSAS*, Agronomy and Soil
Midden, Karen, *PSAS*, Landscape Planning
Preece, John, Emeritus, *PSAS*, Plant Biomass Technology
Taylor, Bradley, *PSAS*, Fruit Production
Walters, Alan, *PSAS*, Horticulture
Young, Brian, *PSAS*, Weed Science

A partial listing of other SIUC faculty active in environmental research and teaching:

Rice, Don, *Anthropology*, Human Ecology
Koropchak, John, *Chemistry*, Environmental Chemistry
Chevalier, Lizette, *Civil Engineering*, Physical Remediation
Nicklow, John, *Civil Engineering*, Hydrology, Hydrological Modeling
Mead, John, *Coal Extraction and Utilization Research*
Beck, Robert, Emeritus, *School of Law*, Oil and Gas, Mining, Water Law

McCubbin, Patricia, *School of Law*, Environmental Law, Advanced Environmental Litigation, Environmental Law for Business Transactions

Chugh, Paul, *Mining Engineering*, Minerals and Residues Processing

Mohanty, Manoj, *Mining Engineering*, Coal mining and Mineral, Mineral and Coal Processing

Admission and Retention

Students will be admitted to the program on the basis of academic merit, statement of interest, and the availability of a willing Ph.D. advisor. Ph.D. students will be selected on a national and international competitive basis. Admissions will not be rationed by concentration.

Students must have a Master's Degree or a J. D. Students with a Bachelor's Degree may be admitted conditional upon completion of a master's degree from one of the participating departments.

Admission and financial aid are competitive on the basis of Master's-level GPA, professional work experience, and GRE scores, as well as letters of recommendation. Applicants must have a Master's-level GPA of at least 3.25, and meet one of the following:

- 1) a combined verbal and quantitative GRE score of 1100,
- 2) three years of successful professional experience in the environmental/natural resources field.

Highly qualified applicants will be nominated for Doctoral Fellowships and Morris Fellowships.

Students must remain in good standing with a GPA of 3.0 or higher and be making good progress toward identification and completion of a dissertation project. Students in good standing who have qualified for assistantships will be offered funding for at least three 9-month academic years.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for admission to Graduate Study in Environmental Resources Policy. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Candidacy and Dissertation

By the end of their second semester in residence, students must have chosen a concentration and formed a graduate committee to oversee their dissertation research. The graduate committee may have a maximum of three of the five members from one department. Completion of research tools will be determined by committee. Written and oral preliminary examinations consist of two parts, one based on the program core material, and one on the student's chosen concentration. When the student has passed prelims and a dissertation proposal is accepted by the committee, students are admitted to candidacy. If prelims are not passed, they must wait a minimum of three months for the second and final attempt to pass the exam.

Gibson, David, *Plant Biology*, Plant Population And Community Ecology

Feldhamer, George, *Zoology*, Mammalogy, Wildlife Ecology

Whiles, Matt, *Zoology*, Stream Ecology, Freshwater Invertebrates

Candidates will be required to present an acceptable dissertation describing original research. Dissertation approval is based on a successful oral defense of the dissertation research and approval of the dissertation by the graduate committee. The dissertation research must also be presented in ERP 598.

Curriculum

Prerequisites: Students must have at least three of the seven courses listed below to be admitted and must have five upon completion of the program. It is anticipated that most students will fulfill many of the pre-requisites through their previous work at the undergraduate and Master's level and will have working facility with micro-computers. For those students without adequate background, identified courses are required to provide students with the background necessary to successfully participate in the program.

<u>Prerequisites for all Concentrations:</u>	<u>SIUC Course if Unfulfilled:</u>
One course in statistics	EPSY 506 or more advanced
One course in calculus	MATH 150 or more advanced
One course in chemistry	CHEM 200 or more advanced
One course in earth science	GEOG 303I OR GEOL 478 or more advanced
One course in ecology	BIOL 307 or more advanced
One course in resource economics	ABE 440, FOR 411, GEOG 422, or more advanced
One course in the U.S. env. law or policy	FOR 410, GEOG 426, LAW 548, or more advanced

Core: 36 Credits (including 24 in ERP 600)

Concentration: 24 Credits Minimum

Total: 60 Credits

Core Curriculum for all Concentrations

Required Courses:

ERP 500	Physical and Biological Environmental Systems (3)
ERP 501	Economic Systems and Environmental Change (3)
ERP 502	Environmental Decision-Making (3)
ERP 598	Applied Environmental Resources and Policy (1 credit each year in residence.)

Curriculum for Concentrations

Each concentration will require mastery of one or more research tools. Specific courses and research tools will be determined by the student and the research supervisor in consultation with the student's faculty advisory committee. The multi-disciplinary curriculum for each concentration is customized to meet the student's individual interests and career goals.

EARTH AND ENVIRONMENTAL PROCESSES CONCENTRATION

The curriculum may include courses in geology, biological science, physical science areas other than geology, geography (GIS and cartography), environmental law, remote sensing, soil science, mining and civil engineering, computer science and statistics.

ENERGY AND MINERAL RESOURCES CONCENTRATION

The curriculum may include courses in geology, biological science, physical science areas other than geology, geography (GIS and cartography), environmental law, remote sensing, soil science, mining and civil engineering, computer science and statistics.

ENVIRONMENTAL POLICY AND ADMINISTRATION CONCENTRATION

The curriculum may include courses in environmental law, political science, geography, forestry, agribusiness economics, economics, anthropology, zoology, and statistics. Emphasis is on the processes of public policy formulation and implementation.

FORESTRY, AGRICULTURAL, AND RURAL LAND RESOURCES CONCENTRATION

The curriculum may include courses in agribusiness economics, plant, soil, and agricultural systems, animal science, geography, remote sensing and GIS, human dimensions of natural resource management, plant biology, zoology, and statistics. Emphasis is on the processes of changing land uses of rural landscapes and the implications for the environment and adjacent land uses.

GEOGRAPHIC INFORMATION SYSTEMS, REMOTE SENSING AND ENVIRONMENTAL MODELING CONCENTRATION

Students may elect from several specializations within this concentration including Geoprocessing, Biometrics, Environmental Modeling, and Geological Modeling. The following represent recommended, but not required, sequences of courses in these areas.

Geoprocessing

CS 430	Database Systems (3)
GEOG 408	Advanced Remote Sensing (3)
GEOG 416	Analytical Cartography (3)
GEOG 420	Advanced Geographic Information Systems (3)

Biometrics

FOR 414	Information Management (3)
FOR 451	Natural Resources Inventory (2)
FOR 453	Environmental Impact Assessment in Forestry (2)
FOR 516	Advanced Forest Management (2)

Environmental Modeling

CE 471	Groundwater Hydrology (3)
GEOG 430	Environmental Systems Analysis (3)
PLB 444	Quantitative Plant Ecology (4)
ZOOL 534	Wildlife Habitat Analysis (3)

Geological Modeling

GEOL 413	Quantitative Methods of Geology (3)
GEOL 460	Geological Data Processing (3)
GEOL 470	Hydrogeology (3)
GEOL 570	Advanced Hydrogeology (3)
GEOL 577	Advanced Topics in Surficial Geology (2-6)

WATER RESOURCES CONCENTRATION

The curriculum should include courses in Water Policy and Planning and Hydrological Sciences

Water Policy and Planning

GEOG 422	Economics of Environmental Management (4)
GEOG 425	Integrated Water Management (3)
GEOG 471	Environmental Impact Analysis (3)
LAW 548	Environmental Law I, Laws & Policies (3)
LAW 568	Water Law (3)

Hydrological Sciences Group

CE 418	Water and Wastewater Treatment (3)
CE 419	Advanced Water and Wastewater Treatment (3)
CE 473	Hydrologic Analysis and Design (3)
CE 516	Water Quality Modeling (3)
FOR 402	Wildland Hydrology (3)
FOR 430	Wildland Watershed Management (3)
GEOG 434	Water Resources Hydrology (4)
GEOL 470	Hydrogeology (3)
GEOL 478	Environmental Geology (3)
GEOL 570	Advanced Hydrogeology (3)
GEOL 577	Advanced Topics in Surficial Geology (2-6)
GEOL 578	Fluvial Geomorphology (3)
PLB 445	Wetland Plant Ecology (4)
PLSS 442	Soil Physics (3)
PLSS 445	Irrigation Principles and Practices (3)
PLSS 446	Soil and Water Conservation (3)
ZOOL 415	Limnology (3)
ZOOL 458	Issues in Aquatic Ecology (3)
ZOOL 521	Stream Ecology (3)

Courses (ERP)

500-3 Physical and Biological Environmental Systems.

Application of principles of systems analysis, including chaos and complex adaptive systems, to Earth biogeochemical cycles (e.g. energy, carbon, water, nutrients), inter-relations among them and disruptions to them. Topical focus will vary among: the analysis of how contaminants travel, especially through ground water, and become dispersed in the environment; the origin of soils and the movement of nutrients among plants, water and soils; the origin and distribution of natural resources such as metals and fossil fuels and of natural hazards such as flooding, earthquakes, landslides and volcanism; the global carbon cycle, especially its role in global climate change.

501-3 Economic Systems and Environmental Change.

Investigation of the social forces driving natural resource use and environmental change, including population growth, the globalization and migration of economic activity, changing land use patterns, and economic and technological trends in the major resource use sectors; energy, agriculture, water, and forestry. Principles of environmental impact assessment, ecological footprint analysis and industrial ecology are introduced. The challenge of sustainable development sets the state for an analysis of the future adequacy of the natural resources based on which societies and economics depend. Prerequisite: 500.

502-3 Environmental Decision Making. Analytical concepts relevant for environmental professional will be taught and demonstrated through case studies. Topics to be covered include risk assessment and risk management formulation of environmental impact statements, cost effectiveness and cost benefit analysis, and methods of conflict resolution. The role of economic incentives in encouraging conservation, the role of multiple institutional players in environmental decision-making at various geographic scales (local, state, international, global), and the use of the Internet as a source of environmental information will be emphasized.

510-3 Watershed Policy. Decision-making and collaborative governance of watersheds in a social environment structured by socio-economic opportunities and constraints, ethical considerations, legal and policy issues, and use of computers to aid communication and deliver scientific information (models, GIS, and visualization). Case studies of watershed management will illustrate these concepts. Restricted to: Ph.D. students.

590- 1 to 8 Readings in Environmental Resources and Policy. Readings in a specialized topic under the direction of an approved graduate faculty member. Graded S/U only.

591-3 Seminar in Earth and Environmental Processes.

Research seminar for Environmental Resources and Policy students who are taking the Earth and Environmental Processes concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by

departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 500.

592-3 Seminar in Energy and Mineral Resources.

Research seminar for Environmental Resources and Policy students who are taking the Energy and Mineral Resources concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by the departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 500.

593-3 Seminar in Environmental Policy and Administration.

Research seminar for Environmental Resources and Policy students who are taking the Environmental Policy and Administration concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by the departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 502.

594-3 Seminar in Forestry, Agricultural and Rural Land Resources.

Research seminar for Environmental Resources and Policy students who are taking the Forestry, Agricultural and Rural Land Resources concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by the departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 501.

595-3 Seminar in Geographic Information Systems and Environmental Modeling.

Research seminar for Environmental Resources and Policy students who are taking the Geographic Information Systems, Remote Sensing and Environmental Modeling concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by the departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 500.

596-3 Seminar in Water Resources.

Research seminar for Environmental Resources and Policy students who are taking the Water Resources concentration. Topics may vary. Can be offered concurrently with other graduate seminars offered by the departments affiliated with or participating in the Environmental Resources and Policy program. Prerequisite: 500.

598-1 Applied Environmental Resources and Policy.

Invited speakers from federal, state, or local agencies; nongovernmental organizations; academic institutions; and Environmental Resources and Policy faculty will present case studies on the conduct of environmental research, the development of environmental laws and regulation, and the implementation of environmental policies. Additionally, students will present dissertation proposals and defend their dissertations. Taken for one credit each year in residence in the Environmental Resources and Policy

program. Prerequisite: enrollment in the Environmental Resources and Policy program.

599-1 to 3 Individual Research in Environmental Resources and Policy. Individual investigation under faculty guidance in environmental resources and policy other than that for the dissertation. Only three hours may be credited toward the degree. Prerequisite: admission to Environmental Resources and Policy Program.

600-1 to 24 (1 to 12 hours per semester) Dissertation. Research for and writing of the doctoral dissertation. Prerequisite: consent of instructor.

601-1 Continuing Enrollment. For those graduate students who have not finished their degree and who are in the process of working on their dissertation. The student must have completed a minimum of 24 hours of dissertation research before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

FINANCE

(See Business Administration for program description)

FOOD AND NUTRITION

(See Animal Science, Food and Nutrition for program description)

FOREIGN LANGUAGES AND LITERATURES

www.languages.siu.edu/
forlang@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Albuiexch, Lourdes, Associate Professor, Ph.D., University of California, Riverside, 1997; 1997.

Bender, Lionel, Professor, *Emeritus*, Ph.D., University of Texas at Austin, 1968; 1971.

Betz, Frederick, Professor, *Emeritus*, Ph.D., Indiana University, 1973; 1978.

Brown, Paul, Assistant Professor, Ph.D., Ohio State University, 2003; 2005.

Cáceres, Alejandro, Associate Professor, Ph.D., Indiana University, 1992; 1994.

Carlson, Anne, Assistant Professor, Ph.D., University of Wisconsin, 2001; 2006.

Gobert, David L., Professor, *Emeritus*, Ph.D., University of Iowa, 1960; 1965.

Hammond, Charles E., Associate Professor, Ph.D., Columbia University, 1986; 1987.

Hartman, Steven Lee, Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1971; 1971.

Huth, Thorsten, Assistant Professor, Ph.D., University of Kansas, 2005; 2006.

Johnson, David, Assistant Professor, Ph.D., University of North Carolina at Chapel Hill, 1996; 1997.

Keller, Thomas, Associate Professor, *Emeritus*, Ph.D., University of Colorado, 1975; 1975.

Kim, Alan Hyun-Oak, Associate Professor, Ph.D., University of Southern California, 1985; 1988.

Liedloff, Helmut, Professor, *Emeritus*, Ph.D., Phillips University, Germany, 1956; 1959.

Maisier, Véronique, Associate Professor, Ph.D., University of Paris IV Sorbonne, 1998; 1999.

Meinhardt, Warren, Associate Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1965; 1969.

Momcilovic, Natasa B., Assistant Professor, Ph.D., Purdue University, 2005; 2005.

O'Brien, Joan, Professor, *Emerita*, Ph.D., Fordham University, 1961; 1969.

Smith, Jennifer, Assistant Professor, Ph.D., Indiana University, 2005; 2006.

Speck, Charles, Assistant Professor, *Emeritus*, Laurea in Diritto Canonico, Pontifical Lateran University, Italy, 1963; 1970.

Thibeault, Thomas F., Associate Professor, Ph.D., University of Szeged, Austria, 1989; 1990.

Timpe, Eugene F., Professor, *Emeritus*, Ph.D., University of Southern California, 1960; 1972.

Ulnier, Arnold R., Assistant Professor, *Emeritus*, Ph.D., University of Missouri, 1972; 1970.

Williams, Frederick, Associate Professor, *Emeritus*, Ph.D., Cornell, 1976; 1977.

Winston-Allen, C. Anne, Professor and *Chair*, Ph.D., University of Kansas, 1979; 1991.

The Department of Foreign Languages and Literatures offers a graduate program leading to the Master of Arts degree in foreign languages and literatures. The M.A. program with classes in literature, linguistics and pedagogy allows for considerable breadth of study while offering a well-balanced degree plan. Students may choose to complete their degree with a concentration in either French or Spanish.

Admission

A non-refundable application fee of \$50.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders drawn on United States banks will be accepted. This fee will be waived for students applying from outside of the United States or currently enrolled at SIUC.

In addition to meeting requirements of the Graduate School, the applicant for admission to the programs in the Department of Foreign Languages and Literatures should have a Bachelor's degree with a major in either French or

Spanish. Students with other majors who have a knowledge of either French or Spanish and at least 18 semester hours (27 quarter hours) of relevant courses on the junior-senior level may be admitted. If accepted, students not meeting minimum requirements in course work or in language proficiency will need to take additional course work to make up the deficiency before receiving a Teaching Assistantship. These courses will not count towards fulfilling the degree requirements. Students who meet requirements for admission to the Graduate School but do not meet departmental requirements may register as unclassified students for specific graduate courses in the department only with consent of the instructor and authorization from the head of their language section.

General Requirements

All students are required to take the following classes:

FL 437
FL 436
FR/SPAN 501
FR/SPAN 570
3 classes of literature

Students concentrating in Spanish must take SPAN 414 and either SPAN 511 or SPAN 512.

In addition, students choosing Plan I with a Research Paper will also take:

A 500 level course in literature, linguistics, pedagogy, or instructional technology

FL 506 (for French students) or FL 509 (for Spanish students)

Students choosing Plan I with a Thesis will also take:

FR/ SPAN 599

Students choosing Plan II will also take:

A 500 level course in literature, linguistics, pedagogy, or instructional technology

Comprehensive Examinations

Three hours of Independent Study will be given only under exceptional circumstances and will not duplicate courses which are available. The Director of Graduate Studies is responsible for authorizing such work in cooperation with the individual professor.

M.A. Options

Plan I (Research Option): Either a total of 30 hours of course work plus 1 to 3 hours of credit for a research paper, or a total of 27 hours of course work plus 3 to 6 hours of credit for thesis.

Plan II (Non Research Option): A total of 30 hours of course work, plus Comprehensive Examinations.

Double Majors

Students may pursue a double major in Foreign Languages together with an MA in another program. Consult "Double Major for a Master's Degree" in the Degree Requirements section of this catalog for Graduate School requirements for double majors. In addition to meeting Graduate School requirements, double majors must complete 18 credit hours of course work in Foreign Languages, and either:

- Complete a research paper, earning 1-3 credit hours of FL 506 (French) or FL 509 (Spanish)
- Complete a thesis earning 3 to 6 credit hours of FR/SPAN 599
- Pass comprehensive exams based on the courses the student has taken. and complete one additional 500 level course in literature, linguistics, pedagogy, or instructional technology

Curriculum planning

Prior to registering, each graduate student is required to plan his/her curriculum with the Department's Director of Graduate Studies. The Director of Graduate Studies will advise the student in all matters pertaining to his/her M.A. Program. Before the end of the second semester of study, the student will decide upon either a Research Option (Plan I) or Non Research Option (Plan II) Program. The student choosing the Non Research Program will take

his/her comprehensive examinations at the end of the third semester of study.

The following course of studies is strongly suggested:

First Semester:

3 courses

Second Semester:

3 courses

Third Semester:

2 courses

Comprehensive examinations (Plan II)

Fourth semester:

2 courses

Research Paper/Thesis hours (Plan I)

Transfer of Credits and other Requirements Pertaining to Courses

At least 15 hours of course work must be earned in courses at the 500 level or above, and no more than half the credit applied toward fulfillment of the degree requirements may be transferred from other universities. A student has 6 calendar years to complete the degree and must remain registered (FR/SPAN 601 (Continuing Enrollment)) until the degree is completed.

Grades and Grade-point Average

Any graduate student whose grade point average falls below 3.0 will be placed on academic probation. Any graduate student on academic probation whose grade point average remains below 3.0 for two consecutive semesters in which she or he is enrolled, excluding summer sessions, will be permanently suspended from the Graduate School, unless the department and the collegiate dean petition the graduate dean for an exception.

Research Option (Plan I)

A. Thesis

DESCRIPTION

All students choosing the thesis in the Research Option (Plan I) will register in FR/SPAN 599 (1-6), and must have finished the thesis in a form acceptable to the Committee by the 10th week of their fourth semester, in accordance with the Graduate School's specifications for Theses. The M.A. Thesis is designed to provide the student with the experience and discipline required to research and to write an original, critical study of considerable breadth and scope on the topic chosen.

A thesis represents a substantial piece of original scholarship. While it is difficult to quantify such work, a thesis typically runs about 50 pages and, as the name implies, requires the student to propose a thesis statement on a topic and then to develop proof of this statement based upon a review of secondary literature and the student's own critical thinking and analysis.

PLANNING

Students should try to complete the thesis in one semester, typically the 4th semester of their graduate studies. The student will present a written thesis proposal to his/her thesis advisor, preferably at the end of his/her third semester. This proposal must include a definition and description of a suitable topic, a table of contents, a timetable for completion, and a bibliography. After approval from the thesis advisor, the student must turn a copy of the thesis proposal to the Director of Graduate Studies.

COMMITTEE

The thesis advisor must have some expertise in the field chosen by the student for his/her thesis. The thesis advisor and the other two members of the thesis committee must be tenure-track or tenured faculty. Out of the three committee members, one member (excluding the thesis advisor) may come from a different department, providing his/her specialty is related to the topic of the thesis.

DEFENSE

There will be a public defense of the student's thesis. The student is required to circulate and post relevant information to announce his/her defense. Such information should include at least the title of the thesis, an abstract, a list of the members of the thesis committee, and the location and time of the defense.

B. Research Paper**DESCRIPTION**

All students choosing the research paper in the Research Option (Plan I) will register in FL 506 (1-3) for French or FL 509 (1-3) for Spanish, and must select a research paper advisor specializing in the field related to their research paper, in accordance with the Graduate School's specifications for Research Papers. Normally, this paper will have been developed in one of the student's courses or seminars. The intent of the Graduate School's research paper requirement is for the student to demonstrate his/her ability to conduct research on a given topic and to report the findings in a well-thought, critical, and coherent fashion. It serves to fulfill the Graduate School's research requirement. As such it represents a substantial piece of original work. Although the emphasis is on reporting what others have contributed to a topic through researching secondary sources, it still requires from the student his/her own critical thinking and analysis. Typically, a research paper will run approximately 30 pages.

PLANNING

Students should try to complete the research paper in one semester, typically the 4th semester of their graduate studies. The student will present a written research paper proposal to his/her research paper advisor, preferably at the end of his/her third semester. This proposal must

include a definition and description of a suitable topic, a table of contents, a timetable for completion, and a bibliography. After approval from the research paper advisor, the student must turn a copy of the research paper proposal to the director of graduate studies.

COMMITTEE

The research paper advisor must have some expertise in the field chosen by the student for his/her research paper. The research paper advisor must be tenure-track or tenured faculty and must be appointed in the Department of Foreign Languages and Literatures.

DEFENSE

There will not be any public defense of the student's research paper.

Non Research Option (Plan II)**Comprehensive Examinations****Description**

The comprehensive examinations will be written and organized according to the following guidelines:

French

3 hours French/Francophone literature
2 hours French linguistics
2 hours pedagogy

Spanish

3 hours Spanish/Latin American literature
2 hours Spanish linguistics
2 hours pedagogy

Each year a faculty member from the Department of Foreign Languages and Literatures will be appointed by the Chair to be in charge of the preparation, organization, scheduling, etc., of the comprehensive examinations. It is the student's responsibility to contact this faculty member for all matters pertaining to his/her comprehensive examinations, as early as possible during the 3rd semester of his/her graduate studies. The comprehensive examinations will be based on the courses taken.

French and Spanish Courses offered:

FR 410 (3)	Advanced Language Study
SPAN 511 (3)	Linguistic Structure
SPAN 512 (3)	History of the Language
SPAN 414 (3)	Translation Techniques
SPAN 434 (3)	Colonial Literature in Spanish America
FR / SPAN 490 (1-3)	Advanced Independent Study
FR / SPAN 501 (3)	Studies on a selected Topic or Author
SPAN 520 (3)	Literature of the Middle Ages and Renaissance
SPAN 530 (3)	The Golden Age: Drama

SPAN 531 (3)	Cervantes
SPAN 532 (3)	The Golden Age: Poetry and Prose
FL 436 (3)	Methods in Teaching Foreign Languages
FR 540 (3)	Literature of the 18th century
FR / SPAN 550 (3)	Literary Movements of the 19th century
FR / SPAN 560 (3)	Studies in Literature of the 20th century
SPAN 551 (3)	Spanish-American Literature of the 19th century
SPAN 561 (3)	Spanish-American Literature of the 20th century

FR / SPAN 570 (3)	Culture and Civilization
FR 576 (3)	Francophone Literature
FR / SPAN 580 (3)	Masterpieces in Literature
FR / SPAN 599 (1-6)	Thesis

Foreign Language (FL) Courses

FL 436 (3)	Methods in Teaching Foreign Languages
FL 437 (3)	Instructional technology and foreign language learning
FL 506 (1-3)	Research problems -French
FL 509 (1-3)	Research problems -Spanish

Courses (FL)

436-3 Methods in Teaching Foreign Languages. Survey of general principles of second-language teaching, based upon insights of modern linguistics and learning-psychology. Followed by intensive practical work in classroom and language laboratory with teachers experienced in the student's specific language field. Required of prospective teachers of foreign languages in secondary schools. Prerequisite: concurrent or prior enrollment in 300-level course in French, German, Latin, Russian or Spanish.

437-3 Instructional Technology and Foreign Language Learning. Familiarizes student with basic principles of design, development, utilization and evaluation of computer-based instructional materials for language learning. Introduces students to software authoring packages for multimedia instructional units and develops skills and knowledge for exploring the potential of the Internet as a language-learning and distance-education tool. Prerequisite: concurrent or prior enrollment in 300-level French, German, Latin, Russian or Spanish.

491-1 to 4 Independent Study-ASL/Deaf Studies. Guided individual exploration of some area(s) of significance within the field of American Sign Language or Deafness. Students taking class for graduate credit will do critical study of one aspect. May be repeated as topic varies. Prerequisite: consent of instructor.

506-1 to 6 (1-3, 1-3) Research Problems—French. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis.

507-1 to 6 (1-3, 1-3) Research Problems—German. Individual research on a literary or linguistic problem

involving original investigation in areas not covered by seminars or thesis.

509-1 to 6 (1-3, 1-3) Research Problems—Spanish. Individual research on a literary or linguistic problem involving original investigation in areas not covered by seminars or thesis.

535-3 Critical Theory. Theories of literature and theories underlying literary criticism, taken logically rather than chronologically. Extensive reading, in the original language whenever possible, of both primary statements and exemplificative documents.

566-3 Bibliography and Research Techniques. Introduction to the use of the chief reference works in the humanities and social sciences as they pertain to foreign languages in general. Also, extensive work with bibliography and research methods in French, German, or Spanish.

580-3 Cross-Cultural Pragmatics. This course provides a comprehensive introduction to the study of pragmatics (i.e. language use in social context) in and across cultures. Students encounter pragmatics at work in the classic linguistic domains on and beyond the sentence level and will be exposed to the pragmatics of a wide range of world languages, including several Englishes, Spanish, French, German, Japanese, Finnish, Persian, Apache, and others. (Taught in English).

592-3 Practicum in Instructional Technology. This course offers a hands-on approach to cover the essentials of technology applications in foreign language instruction and learning. Prerequisite: acceptance to the M.A. program in Foreign Languages and Literatures, or consent of instructor.

Chinese (CHIN)

No graduate program in Chinese is offered through the Eastern Languages and Civilization section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

410-3 The Linguistic Structure of Chinese. (Same as Linguistics 411.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

435-3 Business Chinese. An overview of China's business through reading in Chinese dealing with the major aspects of China's foreign trade ranging from broad principles and policies to concrete details of operation and procedure. Enhancement of conversational skills for business contexts. This course satisfies the CoLA Writing-

Across-the-Curriculum requirement. Prerequisite: 320 or equivalent.

470-3 Chinese Literature in Translation. Reading and analysis of selected Chinese works, authors, themes or genres in English translation with attention to literary genres and thought from ancient to contemporary times. Students taking this course for graduate credit will do a critical aspect. No knowledge of Chinese is required.

490-1 to 6 Advanced Independent Study in Chinese. Directed individual study of some question, author, or theme of significance in the field of Chinese literature, language or culture. Prerequisite: consent of instructor.

Classics (CLAS)

No graduate program is offered through the classics section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

Courses numbered 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in Latin. No prerequisite is stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 Latin as a Research Tool. Intensive study of Latin as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor.

415-3 to 9 (3 per topic) Advanced Reading in Greek. Reading and interpretation of works of Greek texts at an advanced level. Satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: three years of Greek or consent of the instructor.

416-3 to 9 (3 per topic) Advanced Reading in Latin. Reading and interpretation of works of Latin texts at an advanced level. Satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: three years of Latin or consent of instructor.

488-3 Latin as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and

extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. Undergraduates who wish to enroll are encouraged to consult with course instructor. With consent of student's own department, and with a grade of *B* or *A*, satisfies graduate program requirements for foreign languages as research tool. Prerequisite: one year of Latin, or equivalent.

491-3 to 9 Classics Seminar. Intensive study of a select area of classis. Recent topics include Greek and Roman Religion, Socrates, and Homer. Capstone research course required for classics major and minors, though others are welcome. There are no formal prerequisites, but some knowledge of the ancient world will prove helpful (such as that provided by CLAS 230, 270, and 271). No knowledge of Latin or Greek required. d research on problems in classics. The academic work may not be done on campus or in conjunction with approval off-campus activities. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: consent of instructor.

French (FR)

Courses numbered 488 are designed to help graduate students prepare for proficiency examination required by certain departments as evidence of competency in French. No prerequisite stipulated. Students must register for these courses and are advised to take them as part of, not in addition to, their graduate program. Students will not receive graduate credit for courses numbered below 400.

388-3 French as a Research Tool. Intensive study of French as basis for development of reading knowledge. Covers grammar and vocabulary portion of first-year sequence in basic skills. Intended for graduate students.

Undergraduates who wish to enroll are encouraged to consult with course instructor.

410-3 Advanced Language Study. Designed to improve language skills beyond the level of 320. Selected grammar review, intensive practice in effective use of the written and

spoken language through translations and free compositions. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 320b or permission of instructor.

420-3 Introduction to French Literature and Cinema. This course will explore representative works in French from a variety of French and Francophone African authors and filmmakers. Students will be introduced to techniques of literary and filmic analysis through the reading of texts and the examination of films in French. FR 420 will be taught in French. Prerequisite: 320a with a passing grade or consent of instructor.

435-3 Business French. Detailed treatment of postal facilities and services, types of banks and their operations, transport of goods, import-export bills of exchange, billing and shipping, insurance, accounting, and the stock market. These topics will be the subject of translations and of commercial correspondence. Prerequisite: 320b or equivalent or permission of instructor.

440-3 Literature of the Enlightenment. Study and discussion of the novel, theater, and philosophic writing of 18th century France as literature and as expressions of the Enlightenment. Major attention given to Montesquieu, Voltaire, Diderot, and Rousseau. Prerequisite: permission of instructor.

450-3 Literary Movements of the 19th Century. Romanticism, Realism, and Naturalism in poems, novels and theater plays followed by an examination of the reaction to these movements and of the influence of symbolism. Prerequisite: permission of instructor.

460-3 Studies in Literature of the 20th Century. Examination of the major themes, forms, techniques and style of novelists from Gide and Proust to Robbe-Grillet and dramatists from Firaudoux to Ionesco and Beckett. Prerequisite: permission of instructor.

470-3 The French and Their History. Study of major French historical events from Vercingetorix to the French Revolution. Examination of the political, philosophical, artistic movements, and historic figures that shaped contemporary France. Taught in French. Recommended before FR 471/571. Prerequisites FR 320B with passing grade or permission of instructor.

475-3 to 6 Travel-Study in France. Travel-study project, planned under supervision of French faculty and carried out in France. Amount of credit depending on scope of study. Prerequisite: 320a or equivalent.

476-3 Francophone Cultures and Literatures. Representative works and authors of the francophone world outside of France with special reference to African, Caribbean and Canadian literatures. Prerequisite: permission of instructor.

480-3 Studies of Masterpieces of French and Francophone Literatures

Selected readings from French and Francophone authors. Introduction to main literary movements from the Middle

Ages to the 20th century. Prerequisite: 330 or permission of instructor.

488-3 French as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign language as research tool. Prerequisite: permission of instructor, or one year of French, or equivalent.

490-1 to 6 Advanced Independent Study in French. Individual exploration of some question, author, or theme of significance within the field of French literature, language or culture. Prerequisite: 320a and permission of instructor.

501-2 to 6 Studies on a Selected Topic or Author. Intensive study of one author or topic.

515-3 Literary Stylistics. A study of the aesthetics and theory of French literary expression. Disciplined stylistic analyses of excerpts from representative works of great French authors. Appreciation of distinctive qualities of each writer's genius. Consideration is given to various stylistic methods. Prerequisite: 330 or permission of instructor.

520-3 Literature of the Middle Ages and Renaissance. A study of selected authors, literary movements, and expressions of the political realities and the philosophical currents of the Middle Ages and Renaissance.

525-3 Descriptive Stylistics. Consideration of levels of linguistic expression in contemporary French through the study of theoretical works and representative texts. Practice in composition and translation.

540-3 Literature of the 18th Century. Selected topics, movements, or authors in the literature of the 18th Century.

550-3 Literature of the 19th Century. Selected topics, movements, or authors in the literature of the 19th Century.

555-12 (3, 3, 3, 3) Advanced French and Francophone Literature and Cinema. Approaches to the study of film as literature. Through close readings of literary and cinematic texts, students will consider questions of period, genre, culture, and representation, and learn to "read" the two media in relationship. Readings in film theory, as well as works of French/Francophone tradition. (a) The 19th Century: Film in the Age of the Novel. (b) The 20th Century: *Nouvelle vague* to *Nouveau roman*... and beyond. (c) Cinéma et littérature francophones: La Version antillaise. (d) Cinéma et littérature du Maghreb. Courses are conducted in French. Need not be taken in sequence.

560-3 Literature of the 20th Century. Study of an author, theme, movement, or critical literary issue of contemporary interest. Topics may range from the Existentialist vision or the Quest for Self to the novel of commitment of the New Novel.

570-3 The French and Their History. Study of major French historical events from Vercingetorix to the French

Revolution. Examination of the political, philosophical, artistic movements and historic figures that shaped contemporary France. Taught in French. Recommended before FR 471/571. Prerequisite FR 320B with passing grade or permission of instructor.

576-3 Francophone Literature. Representative readings of major Francophone writers from Europe, Canada, Africa and the Caribbean. Prerequisite: 330 or permission of instructor.

580-3 Masterpieces of French and Francophone Literatures. Appreciation and analysis of selected masterpieces in French and Francophone literatures with

special attention given to required authors and works from the Master of Arts reading list.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

German (GER)

No graduate program is offered through the German section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

410-3 German for Writing Proficiency. This course teaches the advanced grammar, vocabulary, and stylistic principles students need to write expository prose, critical essays, business and personal correspondence in German. Through readings and discussions in German, it also expands vocabulary and speaking ability. The final exam in the course can be counted for the German writing proficiency examination. This course satisfies the CoLA Writing Across the Curriculum requirement. Prerequisite: 320b with a grade of *B* or the equivalent.

411-3 Linguistic Structure of Modern German. (Same as Linguistics 409) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and application to teaching. Appropriate for students with at least two years of German. Conducted in English.

413-3 Linguistic Variation and Cultural Diversity in the German-Speaking World. Gain intimate knowledge of the German-speaking world about linguistic and cultural variety and identity. Featured varieties include written and spoken German, standard vernacular, regional and urban dialects, youth and minority language, usage, and more. Varieties are explored in structural terms and examined in the social and cultural contexts in which they occur. Course is conducted in German. Prerequisite: 320A or consent of instructor.

435-3 Business German. An overview of German business, presented through lectures, readings and discussions. Coursework with textbook and supplementary materials will focus on the major aspects of German business. Exercises will include vocabulary building, listening and reading comprehension, oral and written summarization, role playing in typical situations, mock telephone conversations and business correspondence. Prerequisite: 320b or consent of instructor.

460-3 German Theater: Literature on Stage. This course will explore developments in the German drama from the eighteenth century to the present, focusing on dramatic

form and social, historical, and cultural contexts. Conducted in German. Prerequisite: 320a or consent of instructor.

465-3 Self and Society: First-person Narrative. This course will introduce beginning students to German literature written in first person. It serves as an introduction to the way the personal voice is constructed in texts, and students will develop their understanding of the German narrative tradition. We will collectively probe our notions of realism, believability, and truth as we read stories of self-conscious narrators. Conducted in German. Prerequisite: 320b with a grade of *C* or better.

488-3 German as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for reading and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign language as a research tool.

490-1 to 6 (1 to 3, 1 to 3) Independent Study in German. Project-study under supervision of German faculty. Amount of credit depends on scope of study. May be repeated as the topic varies, up to the maximum of six semester hours. Prerequisite: senior or graduate standing and approval of supervising instructor.

493-3 to 9 (3 per topic) Seminars in Special Topics in Literature and Language. Topics vary and are announced in advance; both students and faculty suggest ideas. May be repeated as the topic varies. Primarily for undergraduates. Prerequisite: consent of instructor.

590-3 to 9 (3 per topic) Independent Study on Special Topics in Literature and Language. May be repeated only if the topic varies, and with consent of department.

Japanese (JPN)

No graduate program in Japanese is offered through the Eastern Languages and Civilization section. Four-hundred-level courses in this section may be taken for graduate credit unless otherwise indicated in the course description.

410-3 The Linguistic Structure of Japanese. (Same as Linguistics 412.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of theories of comparative-historical linguistics of Japanese and Korean. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: Consent of instructor.

435-3 Business Japanese. An introduction to the language and culture of the Japanese business world and

to the structure of the Japanese business economy. The emphasis will be on learning appropriate levels of formality and politeness in oral communication and on achieving competency in the specialized language of business. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 320a,b or equivalent.

490-1 to 6 Advanced Independent Study in Japanese. Directed individual study of some questions, author, or theme of significance in the field of Japanese literature, language or culture. Prerequisite: consent of instructor.

Spanish (SPAN)

411-3 Linguistic Structure of Spanish. (Same as Linguistics 414). Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching. Not for graduate credit in foreign language programs.

412-3 History of the Spanish Language. Survey of internal and external history, from Vulgar Latin to Modern Spanish. Not for graduate credit in foreign language programs.

414-3 Translation Techniques. A practical introduction to the field of professional translation, from and into Spanish. Prerequisite: 320b or equivalent.

420-3 Studies in Literature of the Middle Ages. Studies of the origins of Spanish literature emphasizing works such as the *Cantar de Mio Cid*, *Libro de buen amor*, and *La Celestina*. Prerequisite: 310 or consent of instructor.

430-3 The Golden Age: Drama. Plays of Lope de Vega, Calderon, Tirso de Molina, and others. Prerequisite: 310a or 310b or consent of instructor.

431-3 Cervantes. Study of Miquel de Cervantes' masterpiece *Don Quixote* and of other Cervantine works. Prerequisite: 310a or b or consent of instructor.

432-3 The Golden Age: Prose and Poetry. The most representative prose and poetry written during the 16th and 17th centuries in Spain. Prerequisite: 310a or consent of instructor.

434-3 Colonial Literature. Study of the literature of Spanish America before 1825. Prerequisite: 310a or consent of instructor.

435-3 Business Spanish. Discussion and practice of the vocabulary, styles, and forms used in Spanish business correspondence, as well as report writing and documents dealing with trade, transportation, payment, banking and advertising. Does not count toward the MA in Foreign Languages. Prerequisite: 320b or consent of instructor.

450-3 Studies in Spanish Literature of the 19th Century. Romanticism, Realism, and Naturalism in Spain. Prerequisite: 310 or consent of instructor.

451-3 Studies in Spanish American Literature of the 19th Century. Modernism, Romanticism, Realism, and Naturalism in Spanish America. Prerequisite: 310 or consent of instructor.

460-3 Studies in Spanish Literature of the 20th Century. The main currents and outstanding works in the literature of Spain since 1900. Prerequisite: 310 or consent of instructor.

461-3 Studies in Spanish American Literature of the 20th Century. The main currents and outstanding works in the literature of Spanish America since 1900. Prerequisite: 310 or consent of instructor.

488-3 Spanish as a Research Tool. Concentrated and individualized training in the recognition and interpretation of basic and complex grammatical structures and in the systematic acquisition of the principles of word formation for vocabulary expansion. Techniques for intensive and extensive readings and for translation of unedited texts in the student's own field of study. Intended for graduate students. With consent of student's department, and with a grade of *B* or *A*, satisfies graduate program requirement for foreign language as a research tool. Prerequisite: one year of Spanish or equivalent.

490-1 to 3 Advanced Independent Study. Individual exploration of some topic in Hispanic literature, language, or culture. Prior consent of instructor required.

501-3 to 6 (3,3) Studies of a Selected Topic or Author. Intensive study of an author or topic in Spanish Literature or Spanish American Literature as announced in advance.

511-3 Linguistic Structure of Spanish (same as LING 514.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

512-3 History of the Spanish Language. Survey of the internal and external history, from Vulgar Latin to Modern Spanish.

520-3 Literature of the Middle Ages. Studies in epic and didactic literature, and lyric poetry, from the origins of Spanish literature to the fifteenth century. Representative works such as the *Cantar de Mio Cid*, *Libro de buen amor*, *Romancero viejo* and *La Celestina* will be studied.

530-3 The Golden Age: Drama. Study and discussion of plays by Lope de Vega, Tirso de Molina, Calderón, and other Golden Age playwrights.

531-3 Cervantes. Study of Miquel de Cervantes' masterpiece "Don Quixote" and of other Cervantine works.

532-3 The Golden Age: Prose and Poetry. Appreciation and analysis of the poetry of Garcilaso de la Vega, Fray Luis de León, Góngora, Quevedo, and of narrative forms such as picaresque fiction, pastoral fiction, and Moorish fiction.

550-3 Spanish Literature of the 19th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

551-3 Spanish-American Literature of the 19th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

560-3 Spanish Literature of the 20th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

561-3 Spanish-American Literature of the 20th Century. Intensive study of a literary movement, trend, genre, or author of the period, as specified by the topic to be announced for each semester.

570-3 Culture and Civilization. The cultural patterns and heritage of the Hispanic people from earliest times to the present.

571-3 Contemporary France. Survey of major historical events of 19th and 20th century France. Examination of contemporary French society focusing on topics such as politics, economy, education, arts and popular culture. Taught in French. Prerequisite FR 320B with passing grade or permission of instructor.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

FORESTRY

www.forestryalumni.siu.edu/
jphelps@siu.edu or plcl@siu.edu

COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

Burde, John H. II, Professor, *Emeritus*, Ph.D., University of Arizona, 1974; 1974.

Carver, Andrew, Associate Professor, Ph.D., Purdue University, 1998; 1998.

Chilman, Kenneth C., Associate Professor, *Emeritus*, Ph.D., University of Michigan, 1972; 1973.

Davenport, Mae A., Assistant Professor, Ph.D., University of Minnesota, 2003; 2004.

Fralish, James S., Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1970; 1969.

Groninger, John W., Professor, Ph.D., Virginia Polytechnic Institute and State University, 1995; 1997.

Holzmeuller, Eric J., Assistant Professor, Ph.D., University of Florida, Gainesville, 2006; 2007.

Mangun, Jean C., Associate Professor, *Emeritus*, Ph.D., Purdue University, 1991; 1996.

Phelps, John E., Professor, *Emeritus*, Ph.D., University of Missouri, 1980; 1990.

Roth, Paul L., Professor, *Emeritus*, Ph.D., Kansas State University, 1968; 1967.

Ruffner, Charles M., Associate Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Schoonover, Jon E., Assistant Professor, Ph.D., Auburn University, 2005; 2006.

Seekamp, Erin J., Assistant Professor, Ph.D., University of Idaho, 2006; 2007.

Williard, Karl W. J., Associate Professor, Ph.D., Pennsylvania State University, 1999; 1999.

Zaczek, James J., Associate Professor and *Chair*, Ph.D., Pennsylvania State University, 1994; 1997.

The Department of Forestry offers advanced courses for the Master of Science degree with a major in forestry. In addition, curricula are available which permit graduate students with an interest in forestry to pursue their interest in Doctor of Philosophy degree programs in other departments.

Admission

In addition to requirements set forth by the Graduate School, the Department of Forestry requires the following:

1. A minimum grade point average of 2.7 is required for admission ($A = 4.0$). A grade point average of 2.7 or higher is required for stipend eligibility when available.
2. The student is required to provide proof of proficiency in technical writing. Normally an expository essay is required to evaluate whether the student should have remedial grammar or writing courses.
3. Three letters of recommendation from former professors, employers, or other responsible individuals are required.
4. Each applicant must complete the statement of interest form. This form indicates the student's area of interest in forestry and the faculty member with whom the student desires to study. All correspondence should be directed to the chair of the Department of Forestry.
5. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Forestry. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper

application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Retention and Completion Requirements

Upon the graduate student's arrival on campus, an advisory committee of 3–5 members of the graduate faculty will be formed to guide the student's work. The same committee will be responsible for preparation and administration of thesis exams and also for the review and evaluation of the thesis. The advisory committee chair and at least one other member of the committee shall be members of the Department of Forestry. The other members may be selected from any academic unit including forestry.

Summary of Events.

1. The deadlines for receipt of applications and official transcripts in the office of the Graduate School are (a) the second Saturday in July for admission to the fall semester (b) the last Saturday in November for admission to the spring semester (c) the last Saturday in March for admission to the summer term.
2. Letters of recommendation should reach the Department of Forestry chair by the same dates as above.
3. Acceptance by department and Graduate School should be announced one month or earlier than the desired matriculation date. A thorough review will be made by a screening committee of Department of Forestry graduate faculty and the departmental

- adviser. Students rejected for admission will also be notified.
4. Registration for first semester's work after student's acceptance by the department.
 5. Appointment of advisory committee chair, written plan for course work, and selection of tentative thesis areas all within first 2 months of residence.
 6. Preparation of formal written thesis outline and preparation of research proposal by the eighth week of the second semester.
 7. Completion of final, typed or reproduced review copies of thesis and submission of advisory committee at least 3 weeks in advance of oral defense of thesis.
 8. Oral exam to be followed by completion of required approval forms. If thesis requires modifications, this should be accomplished immediately to reach the graduate dean's office in due time set by the Graduate School. One bound copy of the thesis will be provided for the department, one for the chair of the advisory committee in addition to two copies required for the Graduate School and a copy for the author. Additional copies may be required for projects sponsored by outside agencies.

Master of Science Programs

The Department of Forestry offers Master of Science students the opportunity to tailor their program to address their interests and career aspirations. Individual programs of study and research are developed by students in consultations with their faculty advisor to ensure timeliness and feasibility. Concentrations included forest resource management, outdoor recreation resource management, and wood science and technology. In addition, recent programs have incorporated further specialization in ecological restoration, forest recreation, human dimensions of natural resource management, riparian forest management, watershed management, and others. Interdisciplinary research is encouraged. Prospective students should review the description of departmental graduate courses described later in this document. Also, please visit the Department's web site for a current description of faculty interests and expertise.

Assistantships and Fellowships. Research assistantships are sponsored each year by the McIntire-Stennis Cooperative Forest Research Act and through several externally funded research projects. Teaching assistantships funded by the College of Agricultural Sciences are also available.

In addition to general awards made through the Graduate School, stipends for research studies are available from the U.S.D.A. Forest Service, the U.S. Department of Interior, other federal and state agencies, and private corporations.

Requirements

Since the normal minimum requirement for graduation is 32 semester hours, the completion of degree work for students holding assistantships should be accomplished within four semesters (including summer) which is also the normal maximum span for financial aid.

The student must attain a grade of *B* or better for all courses specifically required in the student's academic program and which are offered by the Department of Forestry.

To gain teaching experience, graduate students are expected to assist in the classroom or laboratory for at least 1 academic semester (20 hours per week) during their tenure with the Department of Forestry. The remaining semesters will also involve either research or teaching at the rate of 20 hours a week. All graduate students are required to enroll in Seminar (FOR 501) during each semester of residency for which they will receive 1 semester hour of credit.

Staff

In addition to the faculty listed in the Graduate School Catalog, several adjunct professors also hold appointments with the Department of Forestry. These professors are assigned to various natural resource agencies and can serve on graduate guidance committees.

Research Facilities Land. SIUC is well endowed with a number of different forest types which are available to the Department of Forestry for teaching and research purposes. In particular, we are conducting or planning research and demonstration programs on forest plots and experimental fields of the 3000 acres of the University and its experimental farms. We also have access to wooded lands of the 600 acres of the Touch of Nature Environmental Center, 400 acres at the Pine Hills Field Research Station, and other forests.

Through various memoranda of understanding and special use permits we have use of forested lands and plots on the 43,000 acres of the Crab Orchard Wildlife Refuge, the 270,000 acres of the Shawnee National Forest, and the 4000 acres of the Trail of Tears State Forest, all of which are within an hour's drive of Carbondale. A number of research projects are also ongoing on private lands in southern Illinois. Graduate research has also been conducted throughout the country through agreements with the U.S. Forest Service Experiment Stations and the U.S. Department of Interior, as well as internationally.

Physical Facilities. A variety of laboratories are housed within the department, including those specializing in historical ecology and fire, GIS, human dimensions, and water quality. A research greenhouse operated at the Tree Improvement Center on the western side of the campus is in operation for research and graduate teaching.

Greenhouses and growth chamber facilities in the agriculture greenhouses in conjunction with the

Department of Plant, Soil, and General Agriculture are also available.

Courses (FOR)

Courses in this department may require the purchase of supplemental materials. Field trips are required for certain courses.

401-3 Fundamentals of Environmental Education.

(Same as Agriculture 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: ten hours of biological sciences or ten hours of recreation and/or education, or consent of instructor.

402-3 Wildland Hydrology. Fundamentals of hydrology as related to forest and wildland water resources will be emphasized. Considerations will include the hydrologic cycle with emphasis on soil and groundwater regimes, evapotranspiration, surface and subsurface runoff and the quantity and timing of water yield. Offered Spring semester, odd years.

403-3 Agroforestry. This introductory, lecture-discussion course will examine the various agroforestry concepts, systems, technologies and practices. Focus will be on the potential use and benefits of agroforestry, which involves the deliberate combining of woody perennials with herbaceous/agronomic crops and/or animals, on the same land management units, in some form of spatial arrangement and/or temporal sequence to produce desirable ecological and economical interactions among the different components. Prerequisite: junior standing or consent of instructor.

405-3 Forest Management for Wildlife. A study of relationships between contemporary forest management practices and wildlife population dynamics; emphasis is placed on managing individual forest stands for wildlife habitat values and forested landscapes for biological diversity. Requires field trip transportation fee not to exceed \$45 per course registration. Prerequisite: FOR 201, or BIOL 307, or consent of instructor.

408-4 Introduction to Remote Sensing and Geographic Information Systems. Integrated use of mapping, aerial photographs, and field information to evaluate resources in the development of land management plans. Topics range from aerial photo interp., to GIS database mgmt. and vegetation mapping. Course will include classroom presentations, field trips, and lab exercises. Requires field trip transportation fees and supplemental expenditures not to exceed \$50 per course registration. Prerequisite: FOR 201 & 351 or consent.

409-3 Forest Resources Decision-Making. Examines management planning decision-making for multiple-use forests particularly in the public sector. Reviews concepts

useful for analyzing flow-resource problems, emphasizing systems approaches, introduces use of modern quantitative methods to evaluate resource use alternatives. Case studies. Prerequisite: 411, Mathematics 140.

410-3 Forest Resources Administration and Policy. Nature of administrative organizations and influences on behavior of organization members. Society influences causing changes in forestry related organizations. Policy formation and implementation, including roles of special interest groups.

411-3 Forest Resources Economics. Introduction to forest economics: Application of micro- and macro-economic principles to forest timber and non-timber production; capital theory; benefit-cost analysis; and economics of conservation. Prerequisite: Economics 240 or Agribusiness Economics 204; and Mathematics 140.

412-2 Tree Improvement. Basic theories and techniques of obtaining genetically superior trees for forest regeneration. Prerequisite: senior standing.

414-3 Information Management. The collection of physical, biological, and social variables in the field of forestry through sampling survey. The procedures of data manipulation and calculation and the presentation of graphs and tables.

415-3 Urban Ecosystem Management An introduction to fundamental concepts and processes associated with urban environments. Emphasis is on physical, chemical, and biological stresses imposed on landscapes and water resources influenced by land use conversion and subsequent urban sprawl. Requires field trip transportation fee not to exceed \$30 per course registration. Prerequisite: Junior standing or consent of instructor.

416-4 Forest Resource Management. The application of business procedures and technical forestry principles to manage forest properties. Emphasis on integrated resource management for tangible and intangible benefits. Requires field trip transportation fee and supplemental expenditures not to exceed \$40 per course registration. Prerequisite: 351, completion of forest resource summer camp or consent of instructor.

417-2 Forest Land-Use Planning. Principles of location theory as a basis for determining land use; supply of forest land; population pressure and demand; conservation principles; determination of forest land values; institutional factors influencing forest land-use; forest taxation; special taxes, and capital gains. Taught in alternate years. Prerequisite: 411 or consent of instructor.

418-2 Marketing of Forest Products. The role of marketing in the forest industries; review of economic principles; product policy, planning the product line, pricing, marketing channels, marketing programs, marketing

organization and marketing research as influences on the marketing of lumber, wood products, pulp and paper. Taught in alternate years. Prerequisite: 411 or consent of instructor.

420-3 Park and Wildlands Management. The management of state and federal parks and recreation areas. A systems approach toward management and decision-making will be emphasized. Requires field trip transportation fee and supplemental expenditures not to exceed \$40 per course registration. Prerequisite: 320c.

421-3 Recreation Land-Use Planning. Principles and methods for land-use planning of park and recreation environments with emphasis on human dimensions of natural resource research. Focus on planning process and types of information to gather and organize. Application in group field projects. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: 220, 420 or consent of instructor.

422C-4 Park and Wildlands Management Camp. A study of park conditions, visitors, and management practices at selected county, state, and federal park systems in the United States, including the federal wilderness preservation system. Requires field trip and supplemental expenditures not to exceed \$550 per student. Summer camp fees and costs are outlined in the Forestry Major-Forest Recreation and Park Management Specialization. Prerequisite: 220 and consent of instructor.

423-3 Environmental Interpretation. (Same as Agriculture 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Requires field trip transportation fee not to exceed \$40 per course registration. Prerequisite: ten hours biological science or ten hours of recreation.

428-2 Urban Forestry. An introduction to principles and practices useful in the management of trees and forests in populated settings. Emphasis is placed on the development of comprehensive management strategies consistent with the biological, physical, economic and social constraints of the urban environment. Prerequisite: junior or senior standing or permission of the instructor.

429-3 Watershed Management Field Laboratory. A field intensive laboratory course focused on hydrological and biological methods used to manage watersheds and assess watershed health. Laboratory topics include stream gauging, soil water and ground water sampling, channel morphology, stream benthos measurements and water quality analysis of stream and lake ecosystems. Requires field trip transportation fee not to exceed \$30 per course registration.

430-3 Wildland Watershed Management. Emphasis is placed on the principles, technical problems, procedures, alternatives and consequences encountered in managing wildland watersheds for the production of quality water in harmony with other uses. Prerequisite: 331.

431-3 Regional Silviculture. Designed to evaluate the various silvicultural practices as they are commonly employed in various regions of the United States. Offered alternate years. Prerequisite: 310.

451-2 Natural Resources Inventory. Theory and practical problems in biometrics to obtain estimates of natural resource populations. Use of computers and other advanced techniques. Case studies of inventory procedures. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: 351 or consent of instructor.

452-2 Forest Soils. Characterization and fundamental concepts of forest soils and their relationships to forest communities and forest management practices. Emphasis is on the chemical, biological and physical properties of soils as related to forests and forest management. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: Plant and Soil Science 240.

452L-2 Forest Soils Laboratory. Companion laboratory for 452. Emphasis is on methods to characterize and evaluate the chemical, physical, and biological properties of forest soils. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: Plant and Soil Science 240 and Forestry 452 and concurrent registration. Spring semester even years.

453-2 Environmental Impact Assessment in Forestry. Methods of assessing the environmental impact of land-use systems on forest resources and assessing the impact of forest management systems on environmental quality are presented. Case studies culminating in the preparation of environmental impact statements are emphasized. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: senior standing in a natural resource major.

454-2 to 8 Forest Ecology Field Studies. A study of forest communities, soils and site conditions in one of the following ecosystems: (a) Boreal; (b) Lake states; (c) Southern Appalachians; (d) Southern pine. Course requires a field trip of about 10 days. Each trip is worth two semester credits; a maximum of 6 credits may be applied toward graduate credit. Required field trip transportation fee not to exceed \$300 per course registration (a,b,c, or d). Prerequisite: senior standing in natural resources or biological sciences, courses in tree identification, forest ecology and soils and consent of instructor.

460-2 Forest Industries. Analysis of raw material requirements, the processes and the products of forest industries. The environmental impact of each forest industry will also be discussed.

470-2 Wilderness Management, Policy, and Ethics. Study of current management philosophy and practice in America's wilderness. Analysis of current wilderness policy and its historical evolution. Discussion of the evolution of the wilderness idea and the individuals that have influenced it. Weekend field trip required. Required field trip

transportation fee not to exceed \$50 per course registration. Prerequisite: 220 or consent of instructor.

471-3 Interdisciplinary Approaches for Environmental Issues. Application of concepts for the biological, physical and social studies, economics, humanities, and law, are used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite: Plant Biology 301i and admission to Environmental Studies minor program.

480-3 Natural Resource Conflict Management. Examines the role and methods of interest stakeholders in influencing natural resource policies. Emphasis on applied methods, techniques and strategies for conflict resolution, especially collaborative decision making and persuasion theory. Prerequisite: junior standing or consent of instructor.

485-3 Social Influences on Forestry. Study of, and practice in, methods used for effecting social change in forestry and allied natural resource fields. Case studies, readings and survey research methodology are used to develop an understanding of the role of public opinion in ecologically sound natural resource decision making. Prerequisite: senior standing, and a course in statistics.

494-1 to 6 Practicum. Supervised practicum in a professional setting. Emphasis on administration, supervision, teaching and program leadership in community, school, park, forest, institution and public or private agencies. Students should enroll according to their curriculum specialization: (a) Forest environmental assessment, (b) Outdoor recreation resource management, (c) Forest resources management. Prerequisite: consent of instructor.

500-2 Principles of Research. Research philosophy, approaches to research; theory, hypotheses inference, and predicting; problem identification, project development and organization; methods of data collection, analysis and presentation; drawing conclusions and organizing results. Prerequisite: four hours in statistical methods or consent of instructor.

501-1 Graduate Seminar. Presentation and critiques of current research project of faculty, graduate student and selected resource persons.

502-3 Advanced Watershed Hydrology and Management. A study of current issues relating to hydrology and the management of water resources in forested and mixed land-use watersheds. Readings, discussions and projects will focus on research and management topics in water quality and quantity at regional, national and international levels. Prerequisite: 402 or 430 or equivalent or consent of instructor.

504-2 Tree Physiology Concepts and Applications. A study of physiological concepts and attributes of trees that underlies growth, ontogeny, and reproduction in the context of genotype, environment, and their interaction.

Physiological concepts will be presented and discussed in a framework that relates their influence on forest stand management applications and activities such as regeneration, tree planting, silvicultural activities in native forests and plantations, and stand response to disturbance, and the development and maintenance of old growth. Prerequisite: Plant Biology 200, Forestry 331 or a plant physiology course.

506-3 Advanced Landscape Ecology. (Same as 406) (506-3 will have an additional lab requirement) Review and evaluation of current research and concepts in landscape ecology management. Principles of landscape ecology in the context of forested systems will be presented and discussed. Emphasis on how spatial heterogeneity and human activities influence landscape patterns. Prerequisite: G.I.S. course or consent of instructor.

508-2 Historical Ecology. Introduction to the basic concepts and foundations of historical ecology, a discipline which joins traditional ecology with an investigation of human landscape transformation. Emphasis is placed on the interdisciplinary approach to historical ecology with readings in pollen analysis, dendrochronology, land-use history, archival and historical sources, and traditional vegetation surveys and reconstructions. Field trip cost approximately \$35. Offered alternate years. Prerequisite: 300 level plant ecology course or equivalent or consent of instructor.

510-2 Advanced Silviculture. Current and emerging silvicultural issues and their underlying biological principles are discussed. Experimental methodologies and their application to forest management problems are critiqued. Prerequisite: undergraduate courses in forest ecology and silviculture or consent of the instructor.

511-2 Advanced Forest Resources Economics. Application of microeconomic, macroeconomic and capital theory to forest resource problems; introductory econometric methods; long range supply and demand projections; international forest economics and policy problems decision theory in forest resource management. Offered alternate years. Prerequisite: 411 or equivalent or consent of instructor.

512-2 Tree Selection and Breeding. Quantitative methods of describing variation patterns of trees, testing genetic and environmental effects and interactions and evaluations of tree improvement program. Prerequisite: 412 or consent of instructor.

515-3 Advanced Urban Ecosystem Management. An examination of concepts and processes associated with urban environments. Physical, chemical, and biological stresses associated with land use change and urban sprawl will be discussed and presented with a focus on water resources. Class discussion, readings, and projects will concentrate on current research in the urban environment. Prerequisite: Graduate standing or consent of instructor.

516-2 Advanced Forest Management. Case studies in forest land management, management planning, utilizing computer programming, CFI and TSI role in long range management planning. Offered alternate years—odd. Prerequisite: 416, 331 and summer camp or consent of instructor.

520-2 Advanced Park Planning. Study of nature and functions of the recreation environmental planning process in theoretical and policy terms. Types of plans at local, regional and state levels. Evaluation of different types of planning approaches and their utility in particular situations. Offered alternate years. Prerequisite: 421 or consent of instructor.

521-2 Recreation Behavior in Wildlands Environments. Review of sociological and psychological theories relevant to outdoor recreation planning; management alternatives. Review of current behavior research in outdoor recreation. Application of behavioral concepts to recreation planning and administration. Offered alternate years.

523-2 Advanced Resource Interpretation. Survey of theories and methods relating to resource interpretation planning and practice resulting from research in communication, education and marketing. Examines case studies and existing issues current to the profession of interpretation. Stresses relationship between theory and application. Prerequisite: 423 or consent of instructor. Offered alternate years.

530-2 Forest Site Evaluation. A discussion of the factors affecting site quality and their use in present site evaluation methods. Lectures will draw upon recently published scientific literature as well as forest research data collected and analyzed for southern Illinois forests. Laboratories will include sampling of forest sites and stands with subsequent analysis of data using graphic and statistical techniques and a computer to develop site evaluation models. Cost \$20. Prerequisite: 300, Biology 307 or consent of instructor.

531-2 Disturbance Ecology. Provide a historical overview and current perspective on major topics in forest ecology including natural disturbance, gap and patch dynamics, and relevant restoration ecology techniques. This is accomplished through a critical examination of the literature through reading, group discussions, and field trips. Two to three field trips will be organized during the semester to observe the effects of natural disturbance with an approximate total cost of \$25 per student. Offered alternate years. Prerequisite: 300 level plant ecology course (or equivalent) or consent of instructor.

551-3 Wildlife-Habitat Relationships. Theory and practice of analyses pertaining to the study of wildlife-habitat relationships. Understanding of common data collection techniques in wildlife and forestry science. Use of computers, statistical programs, and other forms of data analysis. Ability to work on practical and applied problems in wildlife conservation. Restricted to: Consent of the instructor.

585-3 Human Dimensions of Natural Resource Management. Multidisciplinary study of influences and constraints on human-renewable natural resource interactions. Readings, discussion and problem solving designed to enhance appreciation of human dimensions as an integral component of natural resource management. Emphasis on diverse perspectives on forests, fisheries and wildlife; conceptual frameworks and research methodologies. Prerequisite: course in statistics or consent of instructor. Offered alternate (odd) years.

588-1 to 6 International Graduate Studies. University residential graduate program abroad. Prior approval by the department is required both for the nature of program and the number of hours of credit.

590-1 to 4 Readings in Forest Resources. Intensive consideration is given to current practices and problems in forestry. Prerequisite: consent of instructor.

591A-G 1 to 4 Directed Studies in Forest Resources. Intensive study of disciplines fundamental to forestry. (a) Dendrology. Study of the identification of native and exotic trees. (b) Forest Autecology. Study of the physiology of individual tree species in relation to their environment. (c) Forest Community Ecology. Study analysis and integration of tree growth, forest structure and classification in relation to climate/edaphic factors as an ecological basis for forest management. (d) Forest Measurements. Study of measurement, statistical and data processing concepts; volume, growth, yield of forest products and methods of sampling forest resources. (e) Forest Recreation. Study of principles and methods for land-use planning of park and recreation environments. (f) Silviculture. Study of concepts and techniques utilized in the silvicultural treatment of forests. (g) Wildland Fire Management. Study of all aspects of fire as a phenomenon in wildland management. Prerequisite: consent of instructor.

593-1 to 4 Individual Research. Directed research in selected fields of forestry.

599-1 to 6 Thesis. A Minimum of three and a maximum of six hours to be counted toward a Master's degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

GEOGRAPHY AND ENVIRONMENTAL RESOURCES

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jabsher@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Baumann, Duane D., Professor, *Emeritus*, Ph.D., Clark University, 1968; 1967.

Christensen, David E., Professor, *Emeritus*, Ph.D., University of Chicago, 1956; 1961.

Denise, Paul S., Assistant Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1974; 1968.

Duram, Leslie, Professor and *Chair*, Ph.D., University of Colorado at Boulder, 1994; 1994.

Dziegielewski, Benedykt, Professor, Ph.D., Southern Illinois University Carbondale, 1983; 1985.

Horsley, Doc., Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1974; 1968.

Lant, Christopher L., Professor, Ph.D., University of Iowa, 1988; 1988.

Lieber, Stanley R., Professor, *Emeritus*, Ph.D., University of Iowa, 1974; 1975.

Oyana, Tonny J., Associate Professor, Ph.D., SUNY-Buffalo, 2003; 2003.

Perk, H.F.W., Lecturer, *Emeritus*, A.B., University of California, Los Angeles, 1951; 1964.

Schoof, Justin, T., Assistant Professor, Ph.D., Indiana University, 2004; 2006.

Sharpe, David M., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1968; 1966

Therrell, Matthew D., Assistant Professor, Ph.D., University of Arkansas, 2003; 2007.

Wang, Guangxing, Assistant Professor, Ph. D., University of Helsinki, Finland, 1996; 2007.

The Department of Geography and Environmental Resources offers a program that leads to the Master of Science degree in geography and environmental resources. The Department also participates in the Environmental Resources and Policy Doctor of Philosophy program sponsored by the Graduate School (described in greater detail elsewhere in the Graduate Catalog).

Geography and Environmental Resources is the study of how humans modify, impact, adapt to, monitor, and manage the natural environment they inhabit. Geography students study the dynamic relationship between nature and society in the field and the computer laboratory as well as in the traditional classroom. Students choose among three concentrations focusing on different aspects of geography and environmental resources: environmental resources, geographic information science (GIS), and water resources management.

Students take courses that give them a foundation in these dimensions of environmental resources through a core program, then develop a research focus. Students also develop the analytic and research skills appropriate to their research interest.

The graduate program stresses a problem-solving perspective, for which habits of critical analysis and dialogue are essential. Students take the initiative in designing and carrying out their programs with the guidance of an advisory committee and the departmental faculty. Geography maintains linkages with many other departments. Courses and faculty expertise in other departments complement those in geography, and students are encouraged to take advantage of this. Each student's progress is assessed at regular intervals by the faculty, and the student is notified of the faculty's

assessment. The student is expected to show continued progress in carrying out the program of study, and in developing habits of scholarship and professionalism.

This program requires a \$50.00 nonrefundable application fee that must be submitted with the application for Admissions to Graduate Study in Geography and Environmental Resources. Applicants may pay this fee by credit card when completing the on-line application. The application fee can also be paid by personal check, cashier's check, or money order made payable to SIUC, and cleared through a U.S. Bank. Do not send cash.

Requirements for the Master of Science Degree

Advisement. Students newly admitted to the master's degree program are advised by the graduate program director, with the assistance of departmental faculty. Students choose a permanent adviser at the end of the first semester in residence. The choice of permanent adviser and advisory committee is made in consultation with the graduate faculty, taking into consideration such matters as faculty expertise and faculty advisee loads.

Degree Requirements. To obtain the master's degree, the student shall:

1. Complete all degree requirements specified by the Graduate School, and explained under degree requirements, master's degree program in the *Graduate Catalog*. A total of 30 SCHs must be completed, with 15 of these hours at the 500 level or above.
2. Include as required courses the following: GEOG 500-2, Principles of Research, during the first fall semester in residence; GEOG 501-2, Seminar in Geographic

and Environmental Research, the following semester; GEOG 404, Spatial Analysis, or equivalent, and one research seminar at the 500-level.

3. In consultation with an adviser, develop a program of study, identifying courses to be taken, research skills to be developed, deficiencies to be rectified. This shall be approved by the faculty. The program of study shall include a core of substantive courses in geography and environmental resources, as explained in the policy statement on core curriculum for master's degree students, available from the graduate program director. The program of study may include courses offered by other departments. The graduate faculty will meet to review and approve/disapprove the program of study of each master's degree student enrolled in GEOG 500. An approved program of study will be filed with the graduate program director and department chair as part of GEOG 500.
4. Develop a thesis or research paper proposal. The thesis or research paper proposal must be approved by the student's master's advisory committee before the student registers for GEOG 599, Thesis or GEOG 593, Research in Geography and Environmental Resources. A total of 4–6 semester hours of GEOG 599 may be awarded for a thesis at the discretion of the advisory committee upon final examination on the thesis (see #5 below). A total of 2–3 semester hours may be awarded for a research paper.

5. Submit a thesis or research paper to the advisory committee at least 2 weeks before the comprehensive examination. A student who writes a thesis will be examined by the committee, at a meeting that may be attended by other faculty and students. A research paper will be evaluated and approved by the advisory committee without public presentation.
6. Complete a comprehensive examination. The statement of departmental policy on the master's comprehensive examination is available from the graduate program director. The comprehensive examination and evaluation of thesis or research paper shall be at least 6 weeks prior to the student's projected graduation date. Upon approval of the comprehensive examination and the thesis or research paper, the advisory committee will request the chair of geography forward to the Graduate School the recommendation that the master's degree be awarded.
7. Persons employed by Federal or State water resources institutions choosing the Water Resources Planning concentration are required to take or receive transfer credit for GEOG 422 or 522 (4), 425 (3), and 434 (4). These requirements replace GEOG 401 (4), 404 (3) or equivalent, 500 (2) and 501 (2).

Requirements for the Doctor of Philosophy Degree (See Environmental Resources and Policy Ph.D. program.)

Courses (GEOG)

401-4 Introduction to Geographic Information Systems.

An introduction to geographic information system (GIS)-related topics, including GIScience (theoretical foundation), GIS technology (software training), and GIS applications (real-world solutions). Provides basic principles, concepts and applications of GIS in the context of GIScience - a basic research field, which seeks to redefine geographic concepts and their use. The theoretical foundations of GIS are informed by three basic areas: cognitive models of geographic concepts, computational and implementations of geographic models, and the interaction between GIS and society. Two hours of lecture and classroom presentations, two hours of laboratory exercises each week. Lab fee: \$20. Recommended: GEOG 310i or CE 263.

404-3 Spatial Analysis. This spatial analysis course is an introduction to statistical methods for geographers. The course provides an overview of the application of spatial data analysis techniques, with a concentration on spatial statistical theories, concepts and approaches in the general context of the emerging fields of geographic information system (GIS) and science (GISci). The main focus of this course is on how techniques for the analysis of spatial data can effectively be applied in a GIS environment, with a particular emphasis on the study of spatial patterns,

distributions, and associations. Prerequisite: 401 or consent of instructor.

406-4 Introduction to Remote Sensing. An introduction to the fundamentals of remote sensing as applied to environmental management. This course will examine the theoretical and practical aspects associated with the use and analysis of aerial photography and satellite imagery. These include how remote sensing data are acquired, displayed, analyzed and how information on our environment can be extracted from such data. Students will be introduced to manual interpretation and digital image processing techniques of remotely sensed imagery. Students will have the opportunity to gain hands-on experience using image processing software. Lab fee: \$30.

408-4 Advanced Remote Sensing. Advanced techniques in the analysis of remotely sensed data. Emphasis is placed on digital image processing using state of the art technology. Students will be expected to develop individual problem-driven projects that use the knowledge, tools and techniques that are developed in this course. Two hours of lecture, two hours of lab each week. Laboratory fee: \$30. Prerequisite: 406 or consent of instructor.

412-3 Applied Geographic Statistics. Introduction to basic statistical methods and skills related to the application of statistics to problems in geography. Lectures

are supplemented with meetings in computer labs to stress the applied aspects of the course. Topics covered include descriptive statistics, time series analysis, probability, confidence intervals, hypothesis testing, correlation and regression, and spatial statistics.

416-4 Cartographic Design. Introduction to the concepts and principles of map design and automated cartographic techniques used to promote the understanding of a map as a powerful communication model. Examines techniques for the representation, manipulation, display, and presentation of spatial data using computer mapping techniques and graphics software. Team based projects will address a geographic problem and produce a professional final map. Laboratory fee: \$20. Prerequisite: 401 or consent of instructor.

417-3 GIS Programming and Customization. An intro to computer programming principles and their application in a Geographic Information Systems environment. GIS scripting language principles will be introduced and students will learn the structure of ArcObjects, the program organization of ESRI and ArcGIS products as well as the use of Visual Basic application to manipulate the basic mapping objects. Coursework will involve developing a more advanced program using an extension of choice. Prerequisite: GEOG 401 or consent of instructor.

419-3 Enterprise GIS Planning and Implementation. Students will gain both theoretical and practical understanding of the design process of enterprise GIS; be able to assess the scope of a system and address data and technology requirements of that system; become exposed to a host of the state-of-the-art tools and concepts in enterprise GIS; and learn skills for hardware, software and computer networking issues. Students are expected to have a basic working knowledge of ArcGIS and ArcIMS. Prerequisite: GEOG 401 or consent of instructor.

420-4 Advanced Geographic Information Systems (GIS) Studies. This course focuses on six emerging themes of geographic information science: geospatial ontologies, enterprise GIS, GIS design, geographic data mining and knowledge discovery, geographic data structure and algorithms, 3D imaging and visualization. A seminar approach will be adapted to organize the class into five groups to capture skills in computer programming, cognitive science, database design and systems, computational and mathematical knowledge, and 3D imaging and visualization. Five studio exercises to provide hands-on training and practice will be conducted in the GIS laboratory. Students will be expected to develop individual problem-driven projects that use the knowledge, tools, and techniques that are developed in this course. Two hours of seminar and classroom presentations, two hours of studio exercise each week. Lab fee: \$20. Prerequisite: 401 or consent of instructor.

421-3 Urban Geography. Urban geography is concerned with the spatial interpretations of city centered populations and phenomena. This course uses the geographical

perspective to focus on the complex relationships between and among cultural, economic, environmental, political and social phenomena. Considerable time is devoted to identifying, describing, analyzing, and explaining selected urban problems.

422-4 Economics in Environmental Management. Economics of natural resources use and environmental policy with a focus on efficiency and sustainability. Cost-benefit, cost effectiveness, and policy analysis are applied to environmental management problems in water resources, energy, agriculture, global warming, and other problem areas. Concepts addressed include discounting, uncertainty, risk, externalities, market failure, and policy tools available to governments.

424-3 Sustainable Development. Analysis of the human, economic, technological, environmental, and political dimensions of sustainable development focusing on public and private sector institutions that manage renewable and non-renewable natural resources. Emphasis is on sustainable development as applied to (1) population, (2) energy and the atmosphere, and (3) agricultural impacts on soil and water resources.

425-3 Integrated Water Management. The course provides students with an understanding of the philosophy, procedures, techniques and products of Integrated Water Resources Management - a coordinated approach to land and water resources management at the strategic, regional scale. The course focuses on the tools to implement IWRM - in the enabling environment, institutional roles and the use of management instruments. Case studies and international experiences used to illustrate IWRM implementation failures and successes.

426-4 Administration of Environmental Quality and Natural Resources. (Same as Political Science 445.) An examination of institutional arrangements and administrative practices in the protection and use of land, water, air, and mineral resources. The course includes analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act, and the Surface Mining Reclamation Act.

428-3 GIS and Environmental Modeling. This course will examine the applications of advanced geographic information system (GIS) techniques in environmental management. Particular emphasis will be placed on how to use spatial modeling techniques to analyze environmental impacts of human activities. Topics include the nature of environmental modeling, acquisition and processing of GIS information, spatial models, GIS and modeling, spatial decision support systems, and model integration. These topics will be introduced with case studies. Students will have the opportunity to work on projects of interest to them.

Two hours of seminar and classroom presentation, one hour of lab each week. Prerequisite: 401 and/or 406, or consent of instructor.

429-3 Geography of Local and Organic Food (Same as Geography 529.) A discussion of geographic topics in local and organic food and farming. This includes: spatial distributions, landscapes, policy influences, organic agricultural productivity, food safety, consumer concerns, organic farmers' decision making, organic marketing, local food systems, and organic certification.

430-3 Environmental Systems Analysis. Exploration of the major environmental systems relevant to environmental planning. Topics include concepts of systems and system behavior; basics of systems analysis and modeling environmental systems; environmental fluxes of energy and materials (e.g., hydrologic cycle, carbon cycle, energy budgets, erosion and sediment transport, role of biosphere in organizing fluxes); environmental variability.

431-3 Climatology. Contemporary view of climatology as an interdisciplinary science which focuses on advanced understanding of the physical processes that drive the climate system and the development of skills related to climate prediction and assessment of human impacts on global and regional climate. Prerequisite: 330 or graduate-level status.

433-4 Field Methods in Geography. Quality geographic research depends on obtaining reliable data through an informed research design. Exploring both social and environmental processes, students will actively participate in developing and conducting investigations. Using the SIUC campus and surrounding region as a laboratory, lab exercises will include human geography, geomorphology, climatology and biogeography. Analytical techniques will include introductory statistics and mapping. Lab fee: \$20. Restricted to senior majors in Geography and Environmental Resources or consent of instructor.

434-4 Water Resources Hydrology. Microclimatic factors which affect the hydrologic events of various climatic regions are treated extensively. Methods of estimating geographic variations in hydrologic relations to climatic and microclimatic factors especially evapotranspiration, are compared and evaluated. Consequences of alternative land uses on climate and hydrology are considered regionally.

435-3 Energy Planning. Regional and national differences in energy supply and demand are reviewed followed by a study of current energy resources, the range of demands, and environmental impacts. National and international planning strategies for dealing with changes in energy demand and supply are explored and assessed for present and future implementation probability.

436-3 Natural Hazards. This course develops the skills and perspectives needed to effectively manage natural and technological disasters. Major themes include risk analysis, hazard mitigation and preparedness, response and recovery of the economic and social infrastructure in areas

impacted by earthquakes, floods, drought, toxic material releases and other catastrophic events. Geographic training places a geographer at the forefront of developing hazard management solutions for society.

438-3 Weather Forecasting. Analysis of meteorological forecasting techniques including: (1) interpretation of satellite images and soundings, radar algorithms, severe weather models (NGM, ETA, RUC), and global warming forecasting models; and (2) prediction of air mass/front motion, cloud and precipitation formation, El Nino effects, and isentropic effects on the atmosphere. Charges not to exceed \$5.00 for field trips. Prerequisite: 330 or consent of instructor.

452-3 Environment and Population. Introduction to population geography. Emphasis is on the relationships between population trends, resource use patterns and environmental impacts. Topics include methods and data used to describe and predict populations, theories of population, and policy issues that relate to the interaction between population, quality of life and environmental quality. Prerequisite: 320 or consent.

454-3 Conservation and Environmental Movements. Emphasizes the ways in which humans view and interact with the environment. Conservation literature and the works of influential environmentalists are studied. Specific theories and environmental movements which help to explain society's current perception and use of the environment are studied. Prerequisite: 320 or consent.

456-3 Geographic Visualization. This course will provide an overview of geographic visualization with a concentration on the theories, concepts and approaches of information visualization. Lectures and laboratory exercises will focus on the practical issues of exploratory data analysis (EDA), cartographic design process, web cartography, data quality and generalization, thematic mapping, map animation and multi-media applications. The course will provide students with a working knowledge of commercial software commonly used for graphic-based applications. Students are expected to utilize their hands-on experience gained from the lab exercises to further enhance their proficiency in graphic software. Two hours of seminar and classroom presentations, two hours of studio exercises each week. Lab fee: \$30.

457-3 American Environmental History. (Same as History 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North America by human settlers. Coverage from the Neolithic Revolution to the present.

458-3 Analysis of Risk and Bioterrorism Using GIS. Emphasizes the way in which Geographic Information Systems (GIS) technologies can be utilized to track and detect emergencies such as 911 response, crime, disease, bioterrorism, homeland security, emergency infrastructure, food and water security. Prerequisite: 401, 420, or consent of instructor.

471-3 Environmental Impact Analysis. Techniques of assessing the impact of human activities on the environment, including weighting schemes, cost-benefit analysis, linear programming, and ecological impact assessment. Emphasis is on placing NEPA and EIS writing in legal, economic and environmental perspective.

480-2 to 6 Internship in Geography. Supervised field work in private or public organization dealing with planning, environmental management, or GIS. A report on the work is required at the end of the semester.. Courses may be repeated, but no more than 3 credit hours of geography 480 or 481 may be applied to an undergraduate major. Prerequisite: geography major and consent of department.

481-3 to 12 Cooperative Work Experience in Geography. Placement of advanced undergraduate or graduate student in private or public organization in paid career-related position. Student gains professional experience under faculty and on-site supervision. A report summarizing the work experience is required at the end of the semester. Three credit hours of either 480 or 481 may apply toward requirements for a Geography undergraduate major or graduate degree. Prerequisite: geography major and consent.

490-2 to 4 Readings in Geography. Supervised readings in selected subjects. Prerequisite: geography major, advanced standing.

500-2 Principles of Research. Problem identification in research, review of examples of geographic research, analysis of results of research and project statements are explored with appropriate faculty. Presentation of student research problems justification and identification of student program to complete degree are required.

501-2 Seminar in Geographic Research. Seminar approach to problems of completing background research design of project statements, identification of research methodology and completion of thesis/dissertation project statements. Prerequisite: graduate standing.

510-4 Multivariate Techniques in Geography. Introduction to matrices, vectors and linear equations; multiple regression and correlation, cononical correlation, multivariate analysis of variance and covariance, analysis of variance in two- and three-way designs, multiple discriminant analysis, classification procedures, introduction to elementary factors analysis. Examples and demonstrations of each method; basic introduction to computer applications of multivariate analyses. Prerequisite: graduate standing.

520-2 to 4 Seminar in Physical Systems Evaluation. Prerequisite: graduate standing.

521-2 to 4 Seminar in Resource Planning. Prerequisite: graduate standing.

522-4 Economics of Environmental Resources. A neo-classical, institutional and ecological economics approach to natural resources, environmental services, and policies governing them. Benefit-cost and cost-effectiveness analysis are applied to problems in various natural

resource sectors and to analyzing environmental policies with an emphasis on water resources. Market failure in environmental services as well as valuation techniques and institutional arrangements to overcome it are also addressed in a sustainability context. These issues are addressed in a more advanced mathematical form than in Geography 422. Prerequisite: graduate standing.

524-2 to 4 Seminar in Water Resources Analysis (same as GEOG 425, 524 will have additional research paper requirements). The major goal of this course is to provide the student with the necessary quantitative skills and perspectives needed to assess water resources management problems. Restricted to graduate standing.

528-2 to 4 Seminar in Geographic Information Systems and Environmental Modeling. This course will examine the applications of advanced geographic information system (GIS) techniques in environmental management. Particular emphasis will be placed on how to use spatial modeling techniques to analyze environmental impacts of human activities. Topics include the nature of environmental modeling, acquisition and processing of GIS information, spatial models, GIS and modeling, spatial decision support systems, and model integration. These topics will be introduced with case studies. Students will have the opportunity to work on projects of interest to them. Two hours of seminar and classroom presentation, one hour of lab each week. Prerequisite: consent of instructor.

529-2 to 4 Seminar: Geography of Local and Organic Food. (Same as 429) (529 will have additional research paper requirements.) A discussion of geographic topics in local and organic food and farming. This includes: spatial distributions, landscapes, policy influences, organic agricultural productivity, food safety, consumer concerns, organic farmers' decision making, organic marketing, local food systems, and organic certification. Prerequisite: graduate standing.

539-2 to 4 Seminar on Global Climate Change. (Same as 439.) (539 will have additional requirements.) This course examines the major environmental, social, and policy issues relevant to global climate change, including natural and anthropogenic causes, environmental pollution, land use/land cover change, extinction and biodiversity issues, and potential climate change-related impacts on human health. Restricted to: graduate standing.

591-2 to 4 Independent Studies in Geography. Prerequisite: graduate standing.

593A-2 to 24 (2 to 6 per semester) Research in Environmental Management. Prerequisite: graduate standing.

593B-2 to 24 (2 to 6 per semester) Research in Geographic Information Science. Prerequisite: graduate standing.

593C-2 to 24 (2 to 6 per semester) Research in Water Resources Management. Prerequisite: graduate standing.

596-2 to 4 Field Course. Prerequisite: graduate standing.

599-2 to 6 Thesis. Prerequisite: graduate standing.

600-1 to 32 (1 to 16 per semester) Dissertation.
Prerequisite: graduate standing.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their thesis, or research paper. The student must have completed the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

699-1 Postdoctoral Research

GEOLOGY

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COLLEGE OF SCIENCE

Graduate Faculty:

Anderson, Ken B., Associate Professor, Ph.D., University of Melbourne, Australia, 1989; 2004. Organic geochemistry.

Conder, James, Assistant Professor, Ph.D., Brown University, 2001; 2008.

Crelling, John C., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1973; 1977.

Dutcher, Russell R., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1960; 1970.

Esling, Steven P., Associate Professor and *Chair*, Ph.D., University of Iowa, 1984; 1982. Hydrogeology, quaternary stratigraphy, geomathematics.

Ferre, Eric C., Associate Professor, Ph.D., University of Toulouse, France, 1989; 2003. Structural geology, rock magnetism, tectonics.

Fifarek, Richard H., Associate Professor, Ph.D., Oregon State University, 1985; 1985. Economic geology, stable isotope geochemistry; fluid inclusion studies.

Frank, Charles, O., Assistant Professor, *Emeritus*, Ph.D., Syracuse University, 1973; 1970.

Harris, Stanley, E., Jr., Professor, *Emeritus*, Ph.D., University of Iowa, 1947; 1949.

Ishman, Scott E., Associate Professor, Ph.D., The Ohio State University, 1990; 1999. Paleoecology, Cenozoic paleobiology, foraminifera.

Lefticariu, Liliana, Assistant Professor, Ph.D., Northern Illinois University, 2004, 2007. Isotope geochemistry, Environmental Geochemistry.

Marzolf, John E., Associate Professor, Ph.D., The University of California, Los Angeles, 1970; 1982. Clastic sedimentology, clastic petrology, sequence stratigraphy.

Pinter, Nicholas, Professor, Ph.D., The University of California, Santa Barbara, 1992; 1996. Geomorphology, environmental geology, earthquake hazard.

Rimmer, Sue, Professor, Ph.D., Pennsylvania State University, 1985; 2009.

Ritter, Dale F., Professor, *Emeritus*, Ph.D., Princeton University, 1964; 1972.

Robinson, Paul D., Senior Scientist *Emeritus*, M.S., Southern Illinois University Carbondale, 1963; 1967.

Sexton, John L., Professor, Ph.D., Indiana University, 1974; 1985. Geophysics, seismic reflection and refraction.

Staub, James R., Professor, *Emeritus*, Ph.D., University of South Carolina, 1985.

Utgaard, John E., Professor, *Emeritus*, Ph.D., Indiana University, 1963; 1965.

Zimmerman, Jay, Jr., Professor, *Emeritus*, Ph.D., Princeton University, 1968; 1973.

The Department of Geology offers programs leading to the Master of Science degree (thesis required), a Master of Arts degree in Earth Sciences (thesis not required), and a Graduate Certificate in Earth Sciences. Students wishing to pursue a Doctor of Philosophy degree in the geological sciences may do so under the auspices of the interdisciplinary doctoral program in Environmental Resources and Policy (ER&P). The ER&P program was introduced in 2000 and supercedes the doctoral offerings in Geology and Geography. For details, refer to the *Environmental Resources and Policy* entry in this catalog.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Geology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Graduate Programs

The objectives of the graduate degree programs are to develop the student's competence in the basic fields of earth science and to provide for specialization dependent

on student and faculty interest. Facilities and staff are available for studies involving environmental geology, geomorphology, hydrogeology, paleontology, micropaleontology, paleoecology, coal petrology, coal geology, Pleistocene geology, environmental geochemistry, molecular organic geochemistry, solid earth geophysics, environmental geophysics, applied geophysics, geographic information systems, remote sensing, surface and subsurface mapping, structural geology, stratigraphy, sedimentation, sedimentary petrology, sedimentary environments, ore deposits, petrology, mineralogy, crystallography, energy resources, and petroleum geology. Many of the faculty are actively conducting research in which statistical and computer techniques are applied to problem solving in the earth sciences. Interdisciplinary research with other departments is encouraged.

SIUC Geology faculty and graduate students conduct internationally-recognized research all over the globe. In North America, there are current and recent research efforts in locations ranging from Alaska to Florida, from Nova Scotia to the Sonoran Desert. Farther afield, SIUC Geology researchers are active in Antarctica, Asia, South America and Europe. The Southern Illinois region itself offers a wide

variety of geological conditions ideal for individual study and research.

Students must be admitted unconditionally to the Graduate School before they can be officially admitted to the graduate program in geology. Admission to the graduate program in geology is based on an evaluation of the preparation, ability, and promise of the applicant. Prerequisites for admission include: 1) receipt of GRE test scores sent directly to the Department of Geology; 2) completion of department application forms which are available on request from the department; and 3) receipt of at least 3 letters of recommendation from professors, academic advisers, former employers, or others familiar with the applicant's academic performance, research, or other relevant work. The Department of Geology normally admits graduate students for entrance in the fall semester; however, applicants will be considered for spring admission. The students will be expected to have satisfactorily completed at the undergraduate level the equivalent course work in the basic sciences required for a Bachelor of Science degree in geology at SIUC.

A student admitted with course deficiencies may be required to complete or audit some undergraduate courses. First year teaching assistants are required to enroll in and complete GEOL 500. Other specific requirements will be determined by the student's advisory committee and the department chair. Students are evaluated on an individual basis, their programs are determined by their career goals and the results of informal interviews with individual faculty members.

Requirements for the Master of Science Degree (Thesis Option)

- A total of 30 hours of graduate work completed with a grade point average of 3.0 or better constitutes the minimum credit requirement for the master's degree.
- Courses taken are determined by the student and an advisory committee. The student will not be allowed to apply more than 8 hours of independent study or research courses toward the master's degree (exclusive of thesis credits).
- A student majoring in geology may select a minor field. The minimum course work should then include 20 hours of geology and 10 hours in the minor field.
- A thesis subject must be approved by the chair of the advisory committee at least 20 weeks before the date of graduation.
- A final oral examination, primarily concerned with defense of the thesis is administered as the last step before graduation. The student may be asked any questions the committee feels are relevant.
- In order to pass the final oral examination, students must receive a favorable majority vote from their thesis committee meeting in formal session. Should the student fail the final oral examination, the student, upon concurrence of a majority of the committee, may

arrange a time for a re-examination not less than 30 nor more than 120 days after the first examination. Students who fail the final orals on their second attempt will be ineligible for the master's degree from the Department of Geology.

- Two copies of the approved thesis must be presented to the Graduate School at least three weeks prior to graduation, and a third copy must be presented to the Department of Geology.

Requirements for the Master of Arts Degree in Earth Sciences

The Master of Arts Degree in Earth Sciences is open to post baccalaureate students with degrees in earth science, geology, or related fields. Two fields of concentration are available: *Geospatial Analysis* and *Environmental Geology*. It is intended to expand the knowledge, skills, and specialized training in geological topics. The required course work is thirty (30) graduate credit hours in geology. The courses taken will be determined by interests of the individual student, but must be approved by the student's three-person departmental advisory committee. At least three (3) credits of GEOL 591 Individual Research in Geology must be taken.

Recommended Courses for the Geospatial Analysis Concentration:

GEOL 420 (3) Petroleum Geology
 GEOL 428 (3) Paleocology and Environments of Deposition
 GEOL 434 (3) Engineering and Environmental Geophysics
 GEOL 435 (3) Solid-Earth Geophysics
 GEOL 466 (3) Tectonics
 GEOL 474 (3) Geomorphology
 GEOL 476 (3) Quaternary Geology
 GEOL 478 (3) Advanced Environmental Geology
 GEOL 481 (3) Sedimentary Basin Analysis
 GEOL 484 (3) Geologic Remote Sensing
 GEOL 526 (3) Advanced Topics in Applied Paleocology
 GEOL 535 (3) Advanced Topics in Geophysics
 GEOL 536 (3) Earthquake Seismology
 GEOL 538 (3) Gravity and Magnetism
 GEOL 576 (3) Coastal Geomorphology and Sedimentology
 GEOL 577 (3) Advanced topics in Surficial Geology
 GEOL 578 (3) Fluvial Geomorphology
 GEOL 579 (3) Soil Geomorphology
 GEOL 591 (3) Individual Research in Geology
 GEOG 418 (3) Introduction to Geographic Information Systems
 GEOG 420 (3) Advanced Geographic Information Systems

Recommended Courses for the Environmental Geology Concentration

GEOL 417 (3) Isotope Geochemistry

GEOL 418 (3) Low Temperature Geochemistry
 GEOL 421 (3) Organic Geochemistry
 GEOL 420 (3) Petroleum Geology
 GEOL 428 (3) Paleocology & Environments of Deposition
 GEOL 434 (3) Engineering and Environmental Geophysics
 GEOL 470 (3) Hydrogeology
 GEOL 470 (3) Hydrogeology Laboratory
 GEOL 474 (3) Geomorphology
 GEOL 476 (3) Quaternary Geology
 GEOL 478 (3) Advanced Environmental Geology
 GEOL 481 (3) Sedimentary Basin Analysis
 GEOL 484 (3) Geologic Remote Sensing
 GEOL 517 (3) Advanced Topics in Geochemistry
 GEOL 526 (3) Advanced Topics in Applied Paleocology
 GEOL 527 (3) Micropaleontology
 GEOL 576 (3) Coastal Geomorphology and Sedimentology
 GEOL 577 (3) Advanced Topics in Surficial Geology
 GEOL 578 (3) Fluvial Geomorphology
 GEOL 579 (3) Soil Geomorphology
 GEOL 591 (3) Individual Research in Geology
 GEOG 418 (3) Introduction to Geographic Information Systems
 GEOG 420 (3) Advanced Geographic Information Systems

Graduate Certificate

The Certificate in Earth Science with an optional concentration in Geospatial Analysis or Environmental Geology is open to post baccalaureate students with degrees in earth science, geology, or related fields. It is intended to expand the knowledge, skills, and specialized training in geological topics. The course work will include eighteen (18) graduate credit hours in Geology. While there are no specific courses required, the courses taken will be determined by the student and the departmental Coordinating Committee. For the concentrations in Geospatial Analysis and Environmental Geology, please refer to the above recommended course lists for the Non-Thesis Master's program.

Students must maintain a B average in graduate courses and must follow the rules of the Certificate Policy established by the Graduate School. Maximum time allowed to complete the requirements for the certificate is five years.

Courses (GEOL)

Courses with a laboratory may require purchase of a laboratory manual and a supply fee. All courses requiring field trips may have a field trip fee of \$2 to \$7.

405-2 Science Writing and Scientific Communication. Course will teach "survival skills" in scientific reading, writing, communicating, and publishing for new graduate students. Topics will include database search, analysis of journal articles, abstracts, figures and tables, PowerPoint presentations, proposals, posters, thesis writing, and preparation of journal submissions. Enrollment is open to graduate students in the sciences and is by permission of the instructor.

Environmental Resources and Policy Doctoral Program

The central focus of the Environmental Resources and Policy Ph.D. is advanced inter-disciplinary training and research on geological, physical, biological, and social processes responsible for natural resource and environmental problems facing contemporary society. Additionally, the ER&P Ph.D. focuses on assessing public policy alternatives to address those problems and create new opportunities.

Within the broad and flexible ER&P framework, a customized program is developed for each student, permitting him/her to conduct research in traditional and non-traditional earth science subdisciplines, under the direction of one or more Geology faculty members. The program is jointly guided by the Geography and Geology Departments, and the College of Agricultural Sciences (Departments of Agribusiness Economics; Forestry; and Plant, Soil, and Agricultural Systems), with support from the School of Law, the College of Engineering, other key faculty at SIUC, and State of Illinois environmental agencies. Please see the *Environmental Resources and Policy* section of this catalog for detailed information and admission procedures.

Assistantships

Teaching assistantships are awarded and supervised by the Department of Geology. Research assistantships are usually available only from research grants of individual faculty members and are supervised by the faculty member in receipt of the sponsoring grant. Research assistantship awards require prior approval of the assistantship committees of the department. Students in the Geology Master of Science program and the Environmental Resources and Policy PhD program are eligible to apply for teaching and research assistantships from the Department of Geology.

As a matter of policy, the Department of Geology does not ordinarily provide any student working for a master's degree financial support for more than two years. Requests for relaxation of this policy must be made in writing to the department chair.

412-3 Advanced Petrology. In-depth study of the rock forming processes. The relations of rock forming processes to petrographic analysis will be emphasized. Laboratories will deal with hand-specimen and thin-section analysis from selected rock suites with genetic modeling of the resulting data. Prerequisite: 310, 315.

413-3 Quantitative Methods of Geology. An introduction to quantitative methods in a geological and earth sciences context. Topics introduced include sampling plans for geologic studies, non-parametric test of geological data, comparisons of geological samples, analysis of sequential geological data. Laboratories will deal with numerical examples

from all areas of geology. Prerequisite: advanced standing and consent of instructor.

414-3 Paleobotany. (See Plant Biology 414.)

415-3 Optical Mineralogy. The optical properties of minerals and the use of the petrographic microscope for identification of crystals by the immersion method and by thin section. Lecture, laboratory. Prerequisite: 310, Physics 203b or 205b.

417-3 Isotope Geochemistry. Isotope fractionation in natural systems containing D/H, carbon, oxygen, nitrogen, and sulfur. Application of stable isotope studies to environmental processes, paleoclimatology, and geothermometry. Stable and radioactive isotopes are tracers in hydrologic processes, ore deposits, sedimentology, and in crust–mantle differentiation processes. Prerequisite: 310, Chemistry 200, 201, 210, 211 or equivalent.

418-3 Low Temperature Geochemistry. The application of chemical principles to geologic processes that occur on and near the earth's surface. Lecture, laboratory. Prerequisite: 310, Chemistry 200, 201, 210, 211 or equivalent.

419-3 Ore Deposits. Overview of the occurrence, geology and origin of metalliferous mineral deposits. Geologic principles and research techniques important to the understanding of mineral deposits. Introduction to exploration and mining methods. Lectures, laboratories, and field trips. Up to one or two day field trips may be required on weekends. Field trip fee= \$30. Lab fee: \$5. Prerequisite: 302, 315 or consent of instructor.

420-3 Petroleum Geology. The geological occurrences of petroleum including origin, migration and accumulation; a survey of exploration methods, and production problems and techniques. Laboratory study applies geological knowledge to the search for and production of petroleum and natural gas. Prerequisite: 221, 224.

421-3 Organic Geochemistry. The nature, origin and fate of natural and artificial organic materials in rocks and sediments. Topics include characterization of fossil fuels using biological marker compounds, petroleum source rock evaluation, and organic pollutants in the environment. Prerequisite: 325 or consent of instructor.

425-3 Invertebrate Paleontology and Paleoecology. Concepts of paleontology and paleoecology. Emphasis on functional morphology, lifestyles and habitats of fossil invertebrates and algae. The nature and evolution of marine and coastal paleocommunities. The effects of extinction events on paleocommunities and biodiversity. Laboratory. Up to 3 one- or two-day field trips may be required on weekends. Field trips required. Field trip fee = \$95. Lab fee: \$5. Prerequisite: 325 or a biology course.

428-3 Paleoecology and Environments of Deposition. Characteristics, distribution, and classification of recent and ancient environments. Criteria for recognizing ancient environments. Sedimentological and paleoecological approaches. Recognition of ancient environments and environmental associations. Laboratory. Up to 3 one- or two-

day field trips may be required on weekends. Field trip fee= \$85. Prerequisite: 425, 325, or concurrent enrollment.

434-3 Engineering and Environmental Geophysics. Geophysical methods used in engineering and environmental site characterization and assessment and the geophysical detection of environmental hazards. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: Physics 203a or 205a, 203b or 205b, Mathematics 150.

435-3 Solid-Earth Geophysics. Earth's size, shape, mass, age, composition, and internal structure are reviewed in detail as understood from its volcanism, gravity and magnetic fields, seismicity and motion of continents and ocean basins; plate tectonics. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: 302, Mathematics 150 or consent of instructor.

436-4 Elementary Exploration Geophysics. Theory and practice of geophysics as applied to the exploration and development of natural resources. Laboratory involves use of geophysical instruments and interpretation of data. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: 220 or 222; 223, Mathematics 150.

437-3 Field Course in Geophysics. Use of geophysical equipment for collection, analysis and interpretation of seismic, gravity, magnetic, electrical and other types of geophysical data. Field Trip required. Field trip fee= \$115. Lab fee: \$10 Prerequisite: 436 or consent.

440-1 to 8 Advanced Topics in the Geological Sciences. Individual study or research or advanced studies in various topics. Prerequisite: advanced standing and consent of instructor.

445-3 Museum Studies in Geology. History, nature and purpose of geology in museums, relationships of geology to other museum disciplines, application of geologic methods to museum functions, preparation and preservation of specimens; nature, acquisition and utilization of geologic collections in museums, role of research in museums.

450-2 Introduction to Field Geology. Introduction to field techniques, principles of geologic mapping and map interpretation. Field trip fee \$5.00. Prerequisite: 302, 315 or concurrent enrollment.

451-1 to 12 Field Experience in Geology. Preparation for and participation in academically rigorous field trips guided by faculty members. Trips will be to areas of geological interest and will occur during official breaks within or between semesters. Expenses will vary in proportion to the distance traveled and duration of trip and will be determined before each trip. A student may only take a specific trip once for credit. Prerequisite: consent of instructor.

454-6 Field Geology. Advanced field mapping in the Rocky Mountains, including problems in stratigraphy, structure, petrology, paleontology, geomorphology, and economic geology. Lab fee \$250. Prerequisite: 302, 315, 325; 450 recommended.

460-3 Geological Data Processing. Computer applications to geological problems including the processing and

programming of data and the interpretation and evaluation of results. Lecture, laboratory. Prerequisite: Engineering 222 or Computer Science 202.

462-3 Fundamentals of Structural Geology II. Intermediate topics in structural geology including strain theory, field strain analysis, geometry of complex mesoscopic structures and introduction to dislocations, deformation history and microfabric analysis. Hypotheses and orogenesis are discussed and evaluated. Lecture and assigned problems only. Prerequisite: 302 or equivalent.

466-3 Tectonics. Fundamentals of geodynamics applied to plate tectonics: mantle composition and rheology, deformation of the lithosphere, structural characteristics of plate margins, stability of triple junctions, diachronous tectonics, and orogenesis will be examined in detail. One 3-day field trip is required. Field trip fee= \$70. Prerequisite: 302, Mathematics 150 or consent.

470-3 Hydrogeology. Study of the distribution, origin and movement of groundwater and the properties of geologic materials that control groundwater flow and contaminant transport. Geology majors must also take 471 concurrently. Prerequisite: 220 or 222; 223; Mathematics 150, or consent of instructor.

471-1 Hydrogeology Laboratory. Problem sets, laboratory experiments, and field exercises in hydrogeology. Geology majors must take this course concurrently with 470. Field trips required. Field trip fee= \$8. Prerequisite: 220 or 222; 223; Mathematics 150; or consent of instructor.

474-3 Geomorphology. Study of erosional and depositional processes operating at the earth's surface and landforms resulting from these processes. Relationship of processes and landforms to the geologic framework is examined. Laboratory. Field trips required. Field trip fee= \$35. Prerequisite: 220 or 222; 223.

476-3 Quaternary Geology. Methods used to identify, map, date and correlate Quaternary deposits and interpret Quaternary history. Covers glacial, fluvial, coastal, lacustrine and eolian chronologies, oxygen-isotope records from ocean sediments and continental ice cores, volcanic activity and Quaternary climate change. Field trips required. Prerequisite: 220 or 222; 223, 221, 224; or consent of instructor; 474 recommended.

478-3 Advanced Environmental Geology. Application of principles of geomorphology and Quaternary geology to environmental problems and geologic hazards. Lectures and case studies emphasize neotectonics, volcanic hazards, landslides and other mass movements, floods, river channel changes and coastal erosion. Field trips required. Field trip fee= \$35. Prerequisite: 474; 476 recommended.

480-3 Geology of Coal. Geology as related to exploration, development and mining of coal; stratigraphy, sedimentation and structure of coal deposits; type of coal basins and their tectonic setting; concepts of cyclical deposition in coal basins; origin of splits and partings in coal seams; relationship of modern environments and ancient coal-forming environments; structural problems relevant to exploration

and mining of coal; methods of resource evaluation. Three 1-hour lectures week; five half-day field trips. Prerequisite: 220 or 222; 223, 221, 224, 302, 325, or consent of instructor.

481-3 Sedimentary Basin Analysis. The use of stratigraphy, structure, sedimentology and geophysics to determine the paleogeographic evolution of sedimentary basins. Topics include the study of the relationships between host strata and both primary and post-depositional non-renewable resources, plate tectonics and basin evolution and subsurface geologic methods. Prerequisite: consent of instructor.

482-3 Coal Petrology. Structural features and microscopy of coal seams. Origin and alteration of coal constituents. Includes field trips, study of coal specimens and techniques. Prerequisite: 220 or 222; 223, 221, 224; or consent of instructor.

483-3 Forensic Geology. An introduction to the use of geological materials and techniques in criminal investigation. Details from actual criminal cases will be used as examples in all the topics covered which include rock and mineral types, geological and topographic maps, fossils, sand, soils, spores and pollen, geological building materials, art fraud and gemstones. Techniques covered will include optical microscopy, scanning electron microscopy, and x-ray diffraction.

484-3 Geologic Remote Sensing. Applications of remote sensing using aerial photographs, multi-spectral imagery, hyperspectral imagery, thermal infrared imagery, and radar imagery, in structural geology, stratigraphy, geomorphology, oil and mineral exploration, geologic hazard analysis, and planetary exploration. Prerequisite: 220 or consent of the instructor.

500-1 to 2 Teaching for Geology Graduate Students. To help teaching assistants develop skills in conducting laboratory work and leading discussions. One hour required for all teaching assistants in geology. Graded *S/U* only.

510-2 Advanced Sedimentology. Basic principles of field observation, field and laboratory sampling, and data analysis of clastic sedimentary rocks; introduction to laboratory techniques; introduction to statistical, physical and empirical models in sedimentary geology. Field trips required. Prerequisite: 325 or 474.

515-3 Instrumental Analysis in Geology. An introduction to modern methods of instrumental inorganic geochemical analysis that are particularly important in the geology sciences. This includes both operational theory and practical application of methods for the analysis of minerals, rocks and aqueous solutions. Lecture, laboratory. Prerequisite: 310, Chemistry 222 or equivalent, and consent of instructor; 418 recommended.

517-2 to 9 (2 to 6 per semester) Advanced Topics in Geochemistry. Specialized topics in geochemistry. Topics covered might include thermodynamic modeling of mineral-solution equilibria, the role of kinetics in mineral-solution reactions, experimental hydrothermal geochemistry or

other topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: 418 or consent of instructor.

518-3 Clay Mineralogy. Study of the structure, chemistry, origin, and geologic importance of clay minerals. Industrial and other applications of clays. Lecture, laboratory. Prerequisite: 310 or consent.

520-2 to 9 (2 to 6 per semester) Advanced Topics in Igneous and Metamorphic Petrology. Petrologic principles and their relationships and other selected topics to be announced by the department. Prerequisite: consent of instructor.

522-3 Sedimentary Petrology—Siliciclastics. The petrography and petrology of siliciclastic rocks, emphasizing sandstone. Microscopic studies of composition and components of detrital clastic rocks, their origin, provenance, characteristics, diagenesis, cementation and lithification. Prerequisite: 325 or 415 or consent; 520 or 521 recommended.

523-3 Sedimentary Petrology—Carbonates. The origin, classification, diagenesis, and geochemistry of carbonate rocks, with emphasis on petrographic analysis. Study of recent carbonate depositional environments. Laboratory required. Prerequisite: 325, 418 recommended.

524-2 to 9 (2 to 6 per semester) Advanced Topics in Sedimentary Geology. Advanced topics in sedimentary geology. Topics may include clastic depositional environments, carbonate depositional environments; diagenesis of sedimentary rocks, and other topics to be announced by the department. Up to 3 one- or two-day field trips may be required on the weekends. Prerequisite: 428 or 522 or 523 or consent of instructor.

525-2 to 6 (2 to 3 per semester) Advanced Topics in Invertebrate Paleontology. Lectures, readings, field and laboratory studies, including techniques and quantitative methods of study. Preparation for research in paleontology. Topics may include corals, bryozoans, brachiopods, mollusks, echinoderms, biostratigraphy, tempo and mode of invertebrate evolution and other topics to be announced by the department. Maximum credit six semester hours. Prerequisite: 425 or consent of instructor.

526-3 Advanced Topics in Applied Paleoecology. Lectures, field, and laboratory studies, including techniques and quantitative methods. Preparation for research in paleoecology. Emphasis on using fossil marine invertebrates and trace fossils to interpret ancient sedimentary environments. Prerequisite: 428 or consent.

527-3 MicroPaleontology. Structure, classification, paleoecology, stratigraphic distribution, and evolution of microfossils. Laboratory work in techniques of collection, preparation and study of microfossils. Identification and use of microfossils in solving stratigraphic and paleoenvironmental problems. Preparation for research in micropaleontology. Up to 3 one- or two-day field trips required on weekends. Field trips required. Field trip fee=\$85. Prerequisite: 425 or consent of instructor.

535-1 to 9 (1 to 6 per semester) Advanced Topics in Geophysics. Specialized topics in geophysics. Examples include but are not limited to seismic stratigraphy, mid-continent seismicity, isostasy, data processing techniques. The topic to be covered is announced by the department. Maximum credit nine semester hours. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: 435 or 436 or consent of instructor.

536-3 Earthquake Seismology. Observational seismology. Topics include earthquake source mechanisms; propagation, reflection and refraction of elastic waves; ray theory; dispersion of surface waves; the effect of earth structure on the seismogram; and the seismograph. Research projects will be conducted using data from the SIU Geophysical Observatory. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: 435 or 436, Mathematics 150 or consent of instructor.

537-3 Applied Seismology. Study of the seismic reflection techniques, including theory and methods of collection and analysis of seismic reflection data, the seismic method, waveform analysis, and digital filtering with computer applications and seismic instrument characteristics. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: Mathematics 150 or consent.

538-6 (3,3) Gravity and Magnetism. (a) Gravity. Study of gravitational methods used in the solution of geological problems; topics include theory, field operations, data reduction, anomaly separation, two and three-dimensional analysis, and interpretation. Up to 5 one- or two-day field trips may be required on the weekends. (b) Magnetism. Study of magnetic methods used in the solution of geological problems; topics include theory, origin, time variations and induction, paleomagnetism, magnetic properties of earth materials. Field operations, anomaly separation, and interpretation. Up to 5 one- or two-day field trips may be required on the weekends. Prerequisite: 435 or 436, Mathematics 150 or consent of instructor.

550-4 Advanced Economic Geology. In-depth examination of the geologic characteristics, classification and origin of metallic mineral deposits. Aspects of mineral exploration and mining techniques are also discussed. Laboratory exercises emphasize hand specimen and petrographic study of ore and host rock suites. Up to 3 one- or two-day field trips may be required on the weekends.

555-1 to 6 (1 to 3 per semester) Advanced Topics in Economic Geology. Advanced study in a specific area of economic geology to be determined by course participants. Course content may focus on a specific type of mineral deposit or such topical areas as field characteristics, mineral exploration techniques, stable isotope geochemistry, fluid inclusion studies and hydrothermal processes. Maximum six credit hours. Field trips may be required on up to 3 weekends and possibly over Spring vacation. Prerequisite: 550.

565-3 Rock Deformation and Structural Systems. Advanced topics in structural geology with emphasis on theo-

retical and experimental study of rock deformation and analysis of complex structural systems. Lecture and assigned problems only. Prerequisite: 462.

566-3 Advanced Topics in Structural Geology. Lectures, readings, and discussion of advanced aspects of rock deformation: dislocation theory and its applications to flow processes of rocks; experimental rock deformation; incremental and finite strain theory and analysis; and recent developments in structural geology. Prerequisite: 565.

570-3 Advanced Hydrogeology. A combination of lectures, seminars, and independent studies of advanced topics in hydrogeology, particularly geochemistry and the response of aquifers to stresses such as tides, recharge and saline intrusion. Prerequisite: 470.

576-3 Coastal Geomorphology and Sedimentology. Detailed examination of coastal processes and clastic coastal depositional systems. Coastal storms, wave processes, tidal systems, sea level changes, coastal sediment transport, deltaic, barrier island-strandplain, estuarine depositional systems and coastal stratigraphic sequences. Field trip to Louisiana and Texas Gulf Coast required. Field trip fee: \$35. Up to 3 one- or two-day field trips may be required on weekends. Prerequisite: 474 or consent of instructor.

577-2 to 9 (2 to 6 per semester) Advanced Topics in Surficial Geology. Studies of processes, landforms, and deposits in the surface or near surface geologic setting. Selected topics to be announced by the department. Maximum credit nine semester hours. Prerequisite: consent of instructor.

578-3 Fluvial Geomorphology. Detailed study of fluvial processes and landforms within the context of major concepts in geology and geomorphology. Topics include drainage basins, hydro-climatology and surface water hydrology, channel processes, fluvial depositional systems, paleohydrology and changes in fluvial systems through time. Field trips required. Field trip fee: \$35. Prerequisite: 474 and consent instructor.

579-3 Soil Geomorphology. Study of geomorphologic applications of soils. Covers the effects of time, climate, parent material, topography, eolian additions on soil development, classification and chemistry; soil indices; pedogenic thresholds; paleosols; use of soils to evaluate landform age, landform stability, Quaternary stratigraphy, faulting and climate fluctuations. Field trips required. Prerequisite: 474 or consent of instructor.

582-1 to 6 (1 to 3 per semester) Advanced Coal Petrology. Microscopy, source materials, coalification, constitution, and classification of peats, lignites, bituminous coal, anthracite; applications to industrial problems. Prerequisite: 482.

585-3 Earth and Space Science for Teachers. Class designed to help teachers gain an understanding of some of the earth science concepts they need to teach today's standards-based curricula. Develops an understanding of earth materials, how the earth works, earth resources, the

causes of natural disasters, and the exploration of the bodies of our solar system. Prerequisites: A general physical science course or equivalent and consent of the department.

588-3 Global Energy Resources. Ready access to energy is essential to sustaining modern societies. This course will discuss the nature of the resources that have been, are, or potentially could be used to provide energy in the US and around the globe, including fossil fuels, nuclear energy resources, bioenergy resources and emerging energy resources such as geothermal, wind, tidal, and solar energy.

591-1 to 6 Individual Research in Geology. Investigations in geology other than those for theses or dissertations.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 30 (1 to 16 per semester) Dissertation. Research for and writing of the doctoral dissertation. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their thesis, or research paper. The student must have completed the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

HEALTH EDUCATION

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COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Birch, David A., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1990; 2001.

Brown, Stephen L., Assistant Professor, Ph.D., University of Maryland, 2001; 2001. Stress management, mental health, anger, violence, and worksite wellness.

Drolet, Judy C., Professor, *Emerita*, Ph.D., University of Oregon, 1982; 1982.

Fetro, Joyce V., Professor, Distinguished Teacher and *Chair*, Ph.D. Southern Illinois University Carbondale, 1987; 1997. . Professional preparation, curriculum development, program planning, death education, substance use prevention, youth development, program evaluation, research design, marketing and advocacy, program administration/management.

Grissom, Deward K., Professor, *Emeritus*, Ed.D., Columbia University, 1952; 1956.

Kittleson, Mark J., Professor and *Director of Graduate Studies*, Ph.D., University of Akron, 1986; 1989. AIDS, program planning, stress management, biostatistics, evaluation, and technology.

Lacey, Ella P., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1979; 1979.

LeFevre, John R., Professor, *Emeritus*, Ed.D., Teachers College, Columbia University, 1950; 1955.

Ogletree, Roberta J., Professor, H.S.D. Indiana University, 1991; 1991. School and college health education, curriculum development, women's health, human sexuality education, professional preparation, health issues and aging.

Ratnapradipa, Dhitinut, Assistant Professor, Ph.D., University of Utah, 2001; 2008. Environmental Health, epidemiology, public health.

Ritzel, Dale O., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1966.

Welshimer, Kathleen J., Associate Professor, Ph.D., University of North Carolina at Chapel Hill, 1990; 1990. Community organizing, women's and children's health, health psychology, community assessment and planning process.

Wilken, Peggy, Clinical Assistant Professor, Ph.D., Southern Illinois University, Carbondale, 1995; 1998. First aid and advanced first aid concepts, environmental health, sexuality, international health, emotional health and aging.

Zunich, Eileen M., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1970; 1967.

The Health Education program offers a graduate program leading to either a Doctoral of Philosophy in Education with an emphasis in Health Education, a Master of Public Health (MPH) in Community Health Education, a Master of Science in Education in Health Education, or a concurrent MPH/PhD in Health Education/Community Health Education. . Persons interested in pursuing any of these degrees should initially consult the director of graduate studies regarding appropriate courses and assignment to an adviser.

Application/Admission. Requirements for admission to the doctoral or master's degree programs in health education are:

1. Completion and submission of Graduate School admission application; a nonrefundable \$50.00 application fee must be submitted with the application for those applying for the Doctoral of Philosophy in Education degree, Master of Science in Education degree, the Master of Public Health degree, or the concurrent MPH/PhD program. Applicants can pay this fee by credit card when applying electronically.
2. Submission of three recommendation forms (available online at www.siu-salukis-hed.com).
3. Submission of all official transcripts for previous undergraduate and graduate work.

Application deadline for summer and fall admission is the third Friday in January. The MPH, PhD., and MPH/PhD only accept candidates for summer/fall admission. Exceptions to these dates may be considered. Contact the graduate director for more information.

Doctor of Philosophy Degree in Education

The Health Education program participates in the doctoral program with a concentration in health education. Other than general requirements of the Graduate School for all Ph.D. degrees, and of the College of Education and Human Services for all Ph.D. degrees in education, the program requires satisfactory completion of HED 500, 510, 515, 525, 526, 533a, 533b, and 597-2. Programs are individually developed with each student. Successful completion of EPSY 505, EAHE 587, and one additional course in quantitative or qualitative methods is required for fulfillment of the research tool for students in the Health Education program. The course of study must include one additional research methods course (if the research tool is quantitative, then the additional methods course must be qualitative and vice versa.) A B average is required in the three courses.

See the description of the Ph.D. degree in education in this chapter for further details.

Inquiries regarding application should be directed to the director of graduate studies of the Department of Health Education and Recreation.

Master of Public Health Degree

Applicants for the Master of Public Health degree must have a 3.00 undergraduate grade point average (A=4.0) to be admitted in good standing.

Only graduate level courses taken after a student's admission to the program will be included automatically in the student's degree program. "Nondeclared" hours or hours from other degree programs must be petitioned into the program. Courses eligible for inclusion in a degree program must be graduate level and cannot have been applied toward another degree. Fall admissions only.

Master of Public Health Degree Requirements

A student must complete a minimum of 43 semester hours with the following core courses (40 hours) being required:

HED 489-3	Biostatistics
HED 500-3	Community Organization
HED 510-3	Program Planning and Curriculum Development in Health Education
HED 525-3	Health Behavior and Health Education
HED 526-3	Research and Evaluative Approaches to Health Education
HED 532-3	Public Health Administration
HED 533a-4	Foundations of Health Education I
HED 583-3	U.S. Health Systems: Organization, Delivery, and Policy
HED 588-3	Current Issues in Environmental Health
HED 590-6	Practicum in Community Health
HED 593-3	Epidemiology
HED 598-3	Grant Writing

Each student will work with an advisor to select an additional 3 hours from courses within Health Education or related courses. All MPH students who are not already certified must take the Certified Health Education Specialist (CHES) exam during the semester of their practicum experience.

Concurrent MPH/PhD:

Candidates may apply for the concurrent MPH/PhD program in health education. Students will earn as MPH in Community Health Education and a PhD in Education, with a concentration in health education. Students will be selected for the program through a competitive process. Coursework has been carefully selected and sequenced for students to complete both degrees in a timely manner. This concurrent degree program is intended for students who desire to teach at the university level and for those who desire full-time student status.

Requirements for Admission:

Besides the current admission criteria, students who are interested in applying to the Concurrent MPH/PhD program must have the following:

- GPA overall 3.5 as undergraduate or 3.6 masters
- GRE scores (verbal, quantitative, and analytical scores are averaged at the 75th percentile).
- Personal interview with faculty (**on campus, video conference or telephone**)
- Undergraduate degree in health education (or closely related field) and five years health-related work experience OR a graduate degree in health education (or closely related field) and three years health related work experience
- Intends to enroll as a full-time graduate student

Master of Science in Education Degree

Applicants for the master's degree must have a 3.00 undergraduate grade point average (A = 4.0) to be admitted in good standing. Only graduate level courses taken after a student's admission will be included automatically in the student's degree program. "Nondeclared" hours or hours from other degree programs must be petitioned into the program. Courses eligible for inclusion in a degree program must be graduate level and cannot have been applied toward another degree.

For potential health education graduate students who are taking courses as nondeclared students, the following will apply: 1) no more than six hours of graduate credit can be applied toward the master's degree in health education; 2) Health Education 533a cannot be taken until a student is formally admitted to the graduate program in health education.

Master of Science in Education Degree Requirements

A student must complete a minimum of 40 semester hours with the following core courses being required:

HED 407-3	Substance Use Prevention
HED 414-3	Sexuality Education
HED 461-3	Coordinated School Health Workshop
HED 491-3	Health Teaching/Learning: School and Community
HED 510-3	Program Planning and Curriculum Development in Health Education
HED 533a-4	Foundations of Health Education I
CI 402-3	Study of Cultural Diversity in Education and Family Services
EPSY 402-3	Basic Statistics
HED 526-3	Research and Evaluation in Health Education
	OR
CI 587-3	Curriculum Implementation and Evaluations
HED 520-6	Special Project (for alternative paper)
	OR

HED 599-6 Thesis

Six hours of the following:

- | | |
|-----------|---|
| KIN 408-3 | Physical Fitness in Education |
| FN 410-3 | Nutrition Education |
| HED 484-3 | Preventing Violence in Educational Settings |

OR

- | | |
|------------|---|
| EPSY 430-3 | Conflict Resolution Skills for Education Environments |
|------------|---|

NOTE: If students have already completed HED 407 and HED 414 in a previous degree, they must take KIN 408, FN 410, HED 484, OR EPSY 430, and one of the following: HED 461 Mental Health; HED 461 Health Counseling; HED 476 Stress Management (with advisor's recommendation).

A generic M.S. Ed. in Health Education is available for those students with exceptional requests. More information

about that degree can be obtained from the graduate director of the program.

Certificate in Conflict Resolution

The Department of Health Education and Recreation participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers HED 461, HED 476, HED 484, and HED 590, as courses that can fulfill program requirements in required and elective areas. For more information on this Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Certificate in Gerontology

The Department of Health Education and Recreation participates in the Certificate in Gerontology interdisciplinary program and offers a class, HED 440 Health Issues in Aging, which is a Certificate requirement. For more information on this Certificate program, please see Certificate Programs in Chapter One of the Catalog

Courses (HED)

400E-2 to 3 Health Appraisal of School Children-Special Topics. Includes the screening, testing and evaluation for numerous health conditions related to hearing, vision, the cardiovascular system, skin, spine and such diseases as diabetes, tuberculosis, herpes and other such ailments. Included will be classroom lectures and presentations, a supervised practicum and all students will develop a viable program in a particular problem area in a public school program.

401-3 Epidemiological Approaches to Disease Prevention and Control. Principles and practices in the cause, prevention and control of diseases in various community settings. Prerequisite: 301 and 305 and consent of instructor.

402-3 Death Education. Designed to prepare educators to conduct learning experiences about death and dying in a variety of school, college, medical care, and community settings. Stress will be placed on developing brief, functional curricula and usable, imaginative teaching-learning materials and on evaluating resource materials for use in educating at various levels of maturity.

403-3 Health Advocate Training. Provides students with knowledge and skills in the areas of peer health education, health advocacy and referral. Instruction includes health care information from a wellness point of view. Prepares students for practicum in health advocate program. Credit will not count toward a Master's degree in health education. Prerequisite: consent of instructor.

407-3 Substance Use Prevention. Designed to prepare educators to plan, implement and evaluate substance use prevention programs in school and community settings. Emphasizes incidence/prevalence, etiology, risk factors, motivations, and short/long-term effects related to substance use. Based on current research, key elements of

effective prevention programs are reviewed. Meets requirements of Illinois state law concerning education about alcohol and other drugs for grades K–12. Prerequisite: 300, 330, 325, and 326 or concurrent enrollment in 325 and 326.

410-3 Human Sexuality. Provides detailed information on dimensions of sexuality; characteristics of healthy sexuality; anatomy and physiology; gender roles; relationships; sexually transmitted infections/diseases; contraceptive issues and concerns; sexual victimization; and sexuality through the life cycle.

411-6 Emergency Medical Technician in the Wilderness. Placement of trained emergency medical technicians into a wilderness situation and having them adopt previously learned skills and newly developed skills. Prerequisite: 310 or 434.

414-3 Sexuality Education. Focuses on knowledge/skills needed to address complex issues of sexuality education. Discussion will include challenges/resources for all health education settings and related disciplines. Purposes/goals, the nature of sexuality education teachers/learners, and "best practice" will be covered. Emphasis on developing competencies essential for professional practice. Prerequisite: 300, 330, 325, 326, and 410 or concurrent enrollment in 325 and 326 for undergraduate health education majors.

415-3 Health Counseling. This course teaches basic communication skills and intervention strategies for helping people make positive health related lifestyle changes. It is not a course in therapeutic counseling; it focuses on helping average people to function in the healthiest way possible.

430-3 Health and Injury Control in a Work Setting. (Same as Industrial Technology 430.) Assesses the health

and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness and injury control that are effective. Field trips to work sites are included.

434-4 Advanced First Aid and Emergency Care. Meets the needs of those in positions where advanced first aid and emergency care is required. A nationally recognized First Aid and CPR "First Responder" certification may be obtained with successful completion of the course. Purchase of first aid kits and protective equipment are necessary. Prerequisite: 334 or consent of instructor. Student will be required to pay a laboratory fee of \$20.

435-2 Work Site Safety and Health Education. This course covers methods of inspecting and evaluating health and safety hazards at a work site including analysis of specific job assignments. It also introduces the student to injury and incident investigation techniques. The course will include hands-on work site evaluation.

440-3 Health Issues in Aging. Course content includes demographic trends; physiological changes associated with aging; health care and consumer challenges; cultural differences; psychological effects of aging; housing; long-term care; retirement; care giving; and formal, informal, and community-based supports systems.

441-3 Women's Health. The course deals with a wide variety of health concerns of American women as consumer in the current health marketplace. Major categories of topics include health products, health services and sources of health information of particular interest to women. Emphasis is also placed on current health related issues of women. The major purpose of the course is to provide a basis for informed decision-making by the female consumer.

442S-5 Developing Vehicle Operational Skills: Driver Education Laboratory Experiences. Learning activities will focus on preparing the prospective driver educator to conduct activities which develop vehicle operational skills for a novice driver. Emphasis is placed on laboratory organization and administration, maintaining a learning environment, developing laboratory instructional modules, and the conduct of learning experiences. Student will be required to pay a laboratory fee of \$25. Prerequisite: 302s.

443S-3 Developing Classroom Skills: Driver Education Classroom Experiences. Learning activities will focus on preparing the prospective driver educator with the skills to teach in the driver education classroom with application to classroom organization, maintaining a learning environment, developing instructional modules, and the conduct of learning experiences. Prerequisite: 302s.

445-3 Advanced Driver Education Instructor Training. Prepares prospective instructors of advanced driving techniques. Emphasis is placed upon safe driving practices, vehicle dynamics, emergency vehicle operation, in-car response to simulated driving emergencies and instructional techniques. Prerequisite: consent of instructor.

450-2 Health Programs in Elementary Schools. This course is designed to present current health-related knowledge/skills to enable teachers to deliver culturally-sensitive, developmentally-appropriate, performance-based instruction to health education to elementary students. In addition to the primary focus of "best practices," it will provide an overview of coordinated school health programs and their relationship to academic achievement. Prerequisite: HED 101 or equivalent.

455-3 Computer Applications in Health Education. Designed for students with little or no previous experience with computers. The course will be applications oriented, with an introduction to the potential uses of computers in the field of health education.

461-1 to 12 Health Education Workshop. A different focal theme each year; e.g., mood modifying substances, ecology, human sexuality, emotional and social health dimensions. Information, ideas, and concepts are translated into teaching-learning materials and approaches; continuing opportunity for interaction between prospective and experienced teachers.

470S-3 Highway Safety as Related to Alcohol and Other Drugs. Relationship between alcohol and other drugs and traffic accident causes. A review of education programs designed to minimize drug related accidents. Prerequisite: advanced standing or consent of instructor.

471-2 Health Education Instructional Strategies. This course is designed for graduate students who are teaching assistants in the Department of Health Education. The purpose of the course is to enhance professional skills of those who are responsible for teaching health education, general education and first aid.

476-3 Stress Management. A study of the physiological, emotional and sociological stressors and their underlying mechanisms in states of disease and health. Particular emphasis is placed upon prevention and control of stress via self assessment techniques and proficiency in self control techniques such as biofeedback, autogenic training, meditation and progressive muscle relaxation.

480S-3 Traffic and Driver Education Program Development. Acquaints students with curriculum innovation, current philosophy, learning and teaching theories, and instructional designs. Students will develop learning packages and modules. Prerequisite: 443s or consent of instructor.

483-3 Health Care Systems in the United States. Background and development of health administration structures in the United States; the dynamics and trends evolving from current medical care programs and practices: interaction between trends and policy-making processes.

484-3 Preventing Violence in Educational Settings. Designed to prepare educators, administrators, and other professionals to plan, implement, and evaluate violence prevention, conflict resolution, and crisis intervention programs in educational settings. Incidence/prevalence, etiology, and risk/protective factors related to youth violence

will be examined. Current theories and models related to program planning and implementation will be applied to design coordinated, integrated school/community programs. Based on current research, key elements of effective curricula and other program components will be reviewed.

485-3 Global Health. This course will present introductory principles and practices related to public health on a global basis. In this course we will analyze various public health aspects of global health, including: public health problems (chronic disease, infectious disease, injury, disability, malnutrition, etc.) affecting foreign countries, prevention and control efforts in foreign countries. U.S. involvement in global health problems, economic and social impact of global health problems, structure and function of health care systems, and the future of global health.

488-3 Environmental Health. Application of the principles of learning to understand people interacting with their environment. Emphasis placed upon individual and community responsibilities for promoting environmental health. Rural and municipal sanitation programs and practices are included.

489-3 Introduction to Biostatistics. An introduction to bio-statistics; examination of theories of population projections; collection, organization, interpretation, summarization and evaluation of data relative to public health happenings with emphasis on graphic presentation.

490A-2 to 12 Field Experiences in Schools, Community Health. Field observation, participation, and evaluation of current school or community health education or safety programs in agencies relevant to student interests. Prerequisite: all required health education courses and consent of instructor.

490B-2 to 6 Advanced Field Experience in School, Community Health or Injury Prevention Education. Advanced field observation, participation and evaluation of current school or community health education or injury prevention programs in agencies relevant to student interest. Prerequisite: grade *B* or better in 490a; consent of instructor.

491-3 Health Teaching/Learning: School and Community. Teaching and learning strategies at secondary school levels and in other community group settings. Opportunities to examine and observe a variety of educational strategies applicable to health education. Prerequisites: 300, 330, 407, 410, 414 or concurrent enrollment in 407 and 414 for undergraduate health education majors.

493-3 Health Informatics. The application of technology to engage communities and individuals in behavioral and environmental change processes. The course will focus on the use of technology to describe the magnitude of health problems and their sources; analyze risk factors; identify community strengths from which strategies may be defined and tools created to intervene, prevent problems, and promote health and well-being; and continuously evaluate, refine, and implement what works.

496-4 Industrial Hygiene. Provides a background in the recognition, evaluation and control of toxic materials and hazardous physical agents in the work environment. Prerequisite: consent of instructor.

499-3 Rx: Education in Health Care Settings. Designed for members and potential members of the health care team to explore educational concepts and strategies applicable to a variety of health care settings. Includes rights and responsibilities of consumer and professional, determinants of health behavior, contrasting models of health care, communication skills, media and materials and planning, implementing and evaluating educational programs. Open to medical and dental personnel, nurses, health educators, dietitians, therapists, pharmacists, social workers and related professionals.

500-3 Community Organization. This course addresses the process of engaging communities in health education and behavior change programs. Various organizing paradigms for fostering healthy communities are examined, and their practical and ethical implications are considered. Skills development for community assessment, constituency-building, and leadership of participatory planning efforts is emphasized.

510-3 Program Planning and Curriculum Development in Health Education. In this course similarities as well as differences between program planning and curriculum development will be examined. For both areas current theories, models and designs will be analyzed. The importance of and procedures for developing philosophy, goals and objectives will be studied. Processes used in selection of content, learning approaches, resource teaching/learning materials will be investigated. Implementation and evaluation issues will be addressed.

511-3 Health Education Conference Practicum. A summer practicum course taken in conjunction with 461, 462 or 463. Participants help plan the conference, analyze activities, suggest alternatives, assume leadership responsibilities, prepare conference proceedings and design a comparable experience with another focal theme. Prerequisite: consent of instructor.

515-3 Contemporary Issues in Health Related Fields. This course is designed to expand the conceptual framework for health education research, practice, and professional development by examining contemporary issues in health and related fields. It includes rearing, analyzing, interaction and reflecting about selected critical issues and future concerns as they relate to the health education profession as well as individual, community, and societal health-related needs.

520-6 Special Topics/Independent Study. An area of study to be determined by students in consultation with the health education faculty that goes beyond the current health education course offerings. 1-3 credits; may be repeated twice for maximum of 6 hours. Prerequisites: consent of instructor.

525-3 Health Behavior and Health Education. Examines health-related motivation and behavior through the study of relevant psychological, sociological, and educational theory and research. Emphasis is on application of behavioral and behavior-change theories and constructs in designing effective health education and promotion programs.

526-3 Research and Evaluative Approaches to Health Education. Introduction to research and evaluation. Includes survey and analyses of health testing and research/evaluation procedures, uses and limitations of knowledge and attitude tests, behavioral inventories, checklists, questionnaires, interviews, and other techniques.

530S-3 Research in Traffic Safety. A study of unique problems related to traffic safety and a review and evaluation of contemporary studies. Prerequisite: graduate standing or consent of instructor.

532-3 Public Health Administration: Principles and Practices. This course is designed to provide a broad overview of key administrative issues in public health, including building and sustaining a public workforce, disease control and prevention, emergency preparedness, legal issues, and financial considerations. Attention will be given to the application of management concepts and principles related to public health organizations at the nation, state, and local levels.

533A-4 Foundations of Health Education I. Historical and philosophical foundations of health education dealing with principles of the discipline and preparation for services as a professional. Consideration of theoretical models of health and health education, professional ethical issues and future directions.

533B-4 Foundations of Health Education II. This course will focus on health education theory, program development, implementation, and evaluation as they relate to research. A broad overview of both qualitative and quantitative research designs, data collection methods, and data analysis methods will be provided. Prerequisite: HED 533A.

536-3 Professional Preparation in Health Education. Considers national, state and local factors influencing professional preparation, accreditation and certification processes. Emphasis upon influences of official and non-official agencies. Historical perspective, the present status, and future directions of the profession.

541-3 Issues in Health Care. Examination of current and continuing issues in the provision, administration, financing and regulation of health care services. Prerequisite: 483 or consent of instructor.

550S-3 Current Developments in Traffic and Safety Education. Current problems, trends and research studies in traffic and safety education are reviewed, critiqued and evaluated.

555S-3 Traffic Safety Management. Course deals with highway safety legislation and other acts related to traffic safety. Application of safety management techniques, pro-

cedures and structure of federal and state agencies are emphasized. Prerequisite: consent of instructor.

561-1 to 12 Advanced Health Education Workshop. A different focal theme each year; e.g., technology and health education; coordinated school health programs; social marketing; mental health. Information, ideas and concepts are translated into teaching/learning materials and approaches; continuing opportunity for interaction between prospective and experienced health educators.

571-3 Professional Development for Teaching Assistants. This course is designed to assist graduate teaching assistants to develop and improve skills necessary for performing their responsibilities. Emphasis will be placed on teaching/learning processes; classroom strategies and skill development; responding to diverse student populations; communication across the curriculum; teaching outside the classroom; identifying campus and community resources, support services, media, and technologies; evaluation and assessment. Prerequisite: Limited to graduate teaching assistants and consent of instructor.

583-3 U.S. Health System: Organization, Delivery, and Policy. This course examines dynamics and trends in organization, financing, and delivery of health care in the United States. Specific current health policy issues and the political, social, and economic forces that affect them are analyzed. Practical implications for public health professionals will be considered.

588-3 Current Issues in Environmental Health. This course will address core principles and concepts of environmental health disciplines, analyze environmental factors impacting human and ecological health, and explore environmental health tools through their application to current issues of concern to government agencies.

590-6 to 9 Practicum in Community Health. Students complete 300 to 450 hours in an approved community health agency. Working with preceptors, students design and put into practice an individual project with goals and objectives emphasizing one or more core competencies (i.e. assessment, planning, implementation, and evaluation). Prerequisite for MPH students: Completion of all coursework and consent of instructor. Restricted to health education majors.

592-8 Practicum in Safety and Industrial Health. Students are assigned full-time to a safety agency or industry for experience in either safety or industrial health. Restricted to those specializing in safety industrial health. Prerequisite: consent of instructor.

593-3 Epidemiology. This course will present principles and practices related to the study, prevention and control of health-related conditions in the human population. Emphasis will be placed on understanding the principle concepts of epidemiology, including aspects of disease distribution, epidemiologic methods, risk assessment of disease and injury, descriptive and analytic epidemiologic methods and study designs, and application of epidemiologic data to the

prevention and control of disease and injury. Format for the class will include lecture and small group seminars.

597-1 Seminar in Health Education. Advanced graduate students discuss individual health projects and present research problems. Each will present a dissertation prospectus. Students must register for one hour for two different semesters.

598-3 Grant Writing in Health Education. Consideration is given to funding sources, proposal guidelines, procedures for support, budgetary requirements and evaluation procedures. Students examine different types of funded projects, develop a research proposal and analyze the art of grantsmanship and political action..

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

HIGHER EDUCATION

www.web.coehs.siu.edu/units/EAHE/
dmibb@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Dietz, Larry H., Associate Professor and *Vice Chancellor for Student Affairs and Enrollment Management*, Ph.D., Iowa State University, 1985; 2000. Student affairs and higher education administration.

Dilley, Patrick W., Associate Professor, Ph.D., University of Southern California, Los Angeles, 2000; 2000. Student affairs and qualitative research.

Donahoo, Saran, Assistant Professor and *Program Director*, Ph.D., University of Illinois at Urbana-Champaign, 2004; 2004. Higher education administration.

Keim, Marybelle C., Professor, Ph.D., Michigan State University, 1972; 1986. College teaching, community colleges, survey research.

Spees, Emil R., Associate Professor, *Emeritus*, Ph.D., Claremont Graduate School, 1969; 1969.

Yakaboski, Tamara, Assistant Professor, Ph.D., University of Arizona, 2007; 2007. Higher education with sociology, organization and administration.

Graduate Study in Higher Education

The Department of Educational Administration and Higher Education provides graduate study leading to the Master of Science in Education degree in higher education.

The graduate program in higher education offers students an opportunity to study and explore the concept of higher education as a field of study. The faculty of this program encourages and assists students in developing a lifetime commitment to the study of higher education. They also provide pre-service and in-service preparation for persons who are teaching or serving as administrators or who expect to teach or serve as administrators in two-year and four-year colleges and universities, and related post-secondary educational institutions and agencies.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Higher Education. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Science in Education Degree

The Department of Educational Administration and Higher Education offers a program in higher education leading to the Master of Science in Education degree. The emphasis of this degree is to provide individuals with the background and skills important to accepting a wide range of teaching and administrative positions in higher education. Concentrations in community college teaching and college student personnel are offered.

Students applying for admission are encouraged to have some leadership experience prior to starting graduate study. Students who expect to complete a program to prepare them for teaching in a community college are expected to have an undergraduate major in a subject area commonly taught in a community college.

Community College Teaching (32 semester hours, minimum). Students who wish to teach in a community college must complete at least 20 semester hours in their teaching specialty and at least 12 hours in specified courses in educational administration and higher education, for a minimum of at least 32 semester hours. Students in this program must secure prior to admission a subject matter adviser from the faculty of the subject area who will agree to help plan the student's academic program.

The common core of courses required of students in this program includes the following:

- EAHE 516-3 College Students and College Cultures
- EAHE 518-3 College Teaching
- EAHE 524-3 Curriculum Design and Policy
- EAHE 526-3 The Community College

Students must also complete a minimum of 20 semester hours in their teaching specialty. Recommended courses beyond the minimum requirements are as follows, and must be taken unless waived by the program coordinator:

EAHE 500-3 Educational Research Methods
EAHE 598-2 to 6 Internship or
EAHE 599-3 Thesis/Individual Research 593

College Student Personnel (42 semester hours). This program is designed to prepare new professionals to work as student affairs administrators and educators within institutions of higher education. Students must complete a minimum of 42 semester hours of courses designed to prepare them as higher education generalists. Through internships, electives, and professional development seminars, students individualize their programs to acquire specialized emphasis in various student affairs units, including admission and recruitment, student development, student activities and programming, alumni relations, career planning, financial aid, orientation, placement, and residence life. Individuals interested in a specialized emphasis in counsel-

ing may apply to complete a double major in both higher education and education psychology.

College Student Personnel Common Core (12 hours):

EAHE 510-3 Higher Education in the United States
EAHE 513-3 Org. and Administration in Higher Education
EAHE 516-3 College Students and College Cultures
EAHE 542-3 Contrasting Philosophies of Education

Educational Research (3 hours)

As selected with advisor.

Cognate (12-18 hours):

Students will work with advisor to construct a cognate, which is compatible with their academic and professional interests. Possible cognates include, but are not limited to: Administration, Cultural Contexts, and Student Affairs.

Professional Development (3 to 9 hours)

EAHE 591-1 to 6 Individual Study
EAHE 598-3 to 6 Higher Education Internship

Capstone (3 hours)

EAHE 547-3 Evaluating Educational Research
EAHE 593L-3 Research Paper
EAHE 599-3 Thesis

Electives (3 to 6 hours)

As selected with advisor.

Waiver for Internship Requirement. Each student must complete or obtain a waiver for the required internship in addition to any paid assistantship that the student may secure. Internships must be in a setting different from the student's assistantship or professional work environment. Internship opportunities exist through most areas of Student Affairs on the SIU Carbondale campus; other locations or settings might be eligible; each student must obtain approval from his/her advisor before initiating any intern-

ship. Student with non-assistantship based, professional experience in higher education may seek a waiver of the internship requirement. All waivers must be in writing and require advisor approval. Students permitted to waive the internship requirement must complete an additional three units of independent study to satisfy the credit requirements needed to obtain the degree.

Research Requirements. Community College Teaching master's students shall demonstrate research competencies through writing an acceptable research paper or master's thesis (which involves original research); College Student Personnel concentration students also have an option, in lieu of a research paper or thesis, to complete EAHE 547 (Evaluating Educational Research). Students who select the thesis option must have an approved prospectus on file at least six months in advance of the anticipated graduation date; they must enroll for 3 hours of EAHE 599, Thesis; and they must have a committee of at least three faculty members. Students who elect to write a research paper must have a committee of two faculty members, and they must enroll in 3 hours of EAHE 593-L, Research Paper. Students who chose the thesis or research paper option are required to complete successfully a final examination, which usually consists of a presentation and defense of the research paper or thesis; this exam may be written, oral, or both.

Certificate in Conflict Resolution

The Department of Educational Administration and Higher Education participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers EAHE 543 and EAHE 591 as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses (EAHE)

For a list of courses, see Educational Administration.

HISTORY

www.history.siu.edu/history@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Adams, Jane H., Associate Professor, Ph.D., University of Illinois, Urbana-Champaign, 1987; 1987. U.S. rural, gender, social movements.

Allen, Howard W., Professor, *Emeritus*, Ph.D., University of Washington, 1959; 1962.

Allen, James Smith, Professor, Ph.D., Tufts University, 1979; 1991. European; Modern: France; social and cultural.

Ammon, Harry, Professor, *Emeritus*, Ph.D., University of Virginia, 1948; 1950.

Argersinger, Jo Ann E., Professor, Ph.D., George Washington University, 1980; 1998; U.S. labor.

Argersinger, Peter H., Professor, Ph.D., University of Wisconsin, Madison, 1970; 1998. U.S. political, rural, Gilded Age.

Barton, H. Arnold, Professor, *Emeritus*, Ph.D., Princeton University, 1962; 1970.

Batinski, Michael C., Professor, *Emeritus*, Ph.D., Northwestern University, 1969; 1968.

Bean, Jonathan J., Professor, Ph.D., Ohio State University, 1994; 1995. U.S.: economic and business.

Bengtson, Dale R., Assistant Professor, *Emeritus*, Ph.D., Hartford Seminary Foundation, 1971; 1973.

Benti, Getahun, Associate Professor, Ph.D., Michigan State University, 2000; 2001. Modern Africa, urbanization-migration.

Brown, Ras Michael, Assistant Professor, Ph.D., University of Georgia, 2004; 2006. Atlantic World.

Carr, Kay J., Associate Professor, Ph.D., University of Chicago, 1987; 1989. U.S. Social; 19th century; Illinois, frontier, environmental.

Carrott, M. Browning, Professor, *Emeritus*, Ph.D., Northwestern University, 1966; 1967.

Conrad, David E., Professor, *Emeritus*, Ph.D., University of Oklahoma, 1962; 1967.

Detwiler, Donald S., Professor, *Emeritus*, Dr. phil., Goettingen University, 1961; 1967.

Dotson, John E., Professor, *Emeritus*, Ph.D., Johns Hopkins University, 1969; 1970.

Espinosa, Mariola, Assistant Professor, Ph.D., University of North Carolina at Chapel Hill, 2003; 2005. The Caribbean and Latin America.

Etienne, Germaine, Assistant Professor, Ph.D., University of Massachusetts, 2004; 2004. African-American history, early nineteenth-century reform movements.

Fanning, Charles F., Professor, *Emeritus*, Ph.D., Pennsylvania, 1972; 1993.

Gold, Robert L., Professor, *Emeritus*, Ph.D., University of Iowa, 1964; 1965.

Haller, John S., Jr., Professor, *Emeritus*, Ph.D., University of Maryland, 1968; 1990.

Hurlburt, Holly S., Associate Professor and Director of Graduate Studies, Ph.D., Syracuse University, 2000; 2001. Early Modern Europe, Italy, women and gender.

Lieberman, Robbie, Professor and Chair, Ph.D., University of Michigan, 1984; 1991. Contemporary U.S., War and Peace, social movements.

Murphy, James B., Associate Professor, *Emeritus*, Ph.D., Louisiana State University, 1968; 1968.

O'Day, Edward J., Associate Professor, *Emeritus*, A.M., Indiana University, 1956; 1962.

Shelby, Lon R., Professor, *Emeritus*, Ph.D., University of North Carolina, 1962; 1961.

Sramek, Joseph, Assistant Professor, Ph.D., CUNY Graduate Center, 2007; 2007. Late modern Europe, imperial England, gender and sexuality.

Stocking, Rachel, Associate Professor, Ph.D., Stanford University, 1994; 1994. European: Ancient and early medieval; cultural and political; Spain.

Weeks, Theodore R., Associate Professor and *Director of Undergraduate Studies*, Ph.D., University of California, Berkeley, 1992; 1993. Russia/USSR, East Central Europe: cultural and political; nationalism.

Werlich, David P., Professor, *Emeritus*, Ph.D., University of Minnesota, 1968; 1968.

Whaley, Gray, Assistant Professor, Ph.D., University of Oregon, 2002; 2006.

Wiesen, S. Jonathan, Associate Professor, Brown University, 1997; 1998. Modern Europe, Germany, Jewish.

Wilson, David L., Professor *Emeritus and Interim Associate Dean and Director of the Graduate School*, Ph.D., University of Tennessee, 1974; 1974.

Yilmaz, Hale, Assistant Professor, Ph.D., University of Utah, 2006; 2006. Islamic, Middle East, modern Turkey.

Zaretsky, Natasha, Associate Professor, Ph.D., Brown University, 2002; 2002. Recent U.S., cultural, gender and family.

SIUE Cooperative Ph.D. Faculty:

Cheeseboro, Anthony, Associate Professor, Ph.D., Michigan State University, 1993. History of development, agriculture, and slavery.

Frick, Carole C., Professor, Ph.D., UCLA, 1995. Renaissance/Reformation and Early Modern history.

Hansen, Stephen L., Professor, Ph.D., University of Illinois, Chicago, 1978. Civil War.

Hinz, Christienne L., Assistant Professor, Ph.D., Ohio State University, 2001. Japanese history, business history, world history, women's history.

Jordan, Thomas, Associate Professor, Ph.D., University of Illinois, Urbana-Champaign, 1999; 2004. History of Brazil, Latin America, social history.

McClinton, Rowena, Associate Professor, Ph.D., University of Kentucky, 1996. Native American history, Antebellum South and United States history since 1865.

Moore, Michael E., Assistant Professor, Ph.D., University of Michigan, 1993. Early medieval history, intellectual history.

Ruckh, Eric, Assistant Professor, Ph.D., University of California, Irvine, 1997. Critical theory.

Tamari, Stephen E., Associate Professor, Ph.D., Georgetown University, 1998. Middle East history, Ottoman Empire, Arab world, Arab-Israeli conflict.

Taylor, John, Professor, Ph.D., University of Chicago. British history, intellectual history, national identity, American colonial history.

Thomason, Allison K., Associate Professor, Ph.D., Columbia University, 1999. Ancient Near Eastern and Greco-Roman history.

The Department of History offers graduate programs leading to the Master of Arts and Doctor of Philosophy degrees.

Research Facilities

Morris Library on the campus is the fourth largest library in Illinois. Housed in a modern seven-story building, it contains more than 2 million volumes and is growing at a rate of over 60,000 items per year. Morris Library acquires current scholarly publications not only from United States but also from Latin America and European publishers. The long-term use of highly specialized materials is afforded by the affiliation of Morris Library with the Center for Research Libraries in Chicago.

The holdings in history and related areas amount to more than 500,000 volumes. To these must be added 20,000 reels of microfilm containing printed secondary works and 6,000 volumes of printed source material and 30,000 volumes of early American imprints prior to 1800 on microtext. Among the materials in the process of acquisition is a microtext edition of all newspapers published in the United States prior to 1820.

The library also possesses substantial holdings in the form of microfilm editions of presidential papers, dispatches and instructions of the state department since 1789, massive holdings in consular records, and the Adams family papers. The library has been a complete repository of United States government documents since 1954 and holds a large collection of earlier documents, including a virtually complete Congressional set.

Following the acquisition of the 7,000-volume library of Jose Morgrovejo Carrion of Ecuador in 1960, the library has systematically expanded its holdings in Latin American history, government, literature, and anthropology. The papers of Francisco Vásquez Gómez, Mexican political leader (1907–1919), Peruvian diplomat and business tycoon, Federic Barreda and Samuel Putnam, American expert on Latin American affairs, provide rich research

opportunities. Extensive files of serial publications from Argentina, Bolivia, Paraguay, Uruguay, Cuba, and Mexico also contain diverse sources for investigation. Many of the above materials are unavailable elsewhere in the United States.

Holdings in European history include the standard documentary publications, as well as scholarly serials and journals. The materials to support research are strongest in modern German and English history.

Admission

Graduate work in history is offered at both the master's and the doctoral levels. Admission to programs administered by the Department of History must be approved by the department, with approval dependent upon the preparation, ability, and promise of the individual student.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in History. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

M.A.: for the Master of Arts degree major in history, applicants are expected to have an undergraduate GPA of 3.0. Applicants with GPAs of below 3.00 may be granted conditional admission. Applicants must also provide a report of the result of the general test of the Graduate Record Examination, three letters of recommendation, and a letter in which the applicant expresses professional goals. Conditional admittants must earn a 3.00 GPA in graduate coursework in the first semester. The department reserves the right to terminate from the history program a student who does not establish and maintain a 3.00 GPA in history courses.

Ph.D.: for admission to the doctoral program, each applicant should submit to the department, in addition to the material required by the Graduate School, the

following: three letters from former teachers, preferably at the graduate level; a letter in which the applicant expresses professional goals; and a report of the result of the general test of the Graduate Record Examination.

In rare instances, accelerated entry into the Ph.D. program is possible for exceptionally qualified M.A. students who have made an early commitment to doctoral study. Such students may petition after two semesters in the M.A. program for accelerated entry. The petitioner must demonstrate the ability to perform at the Ph.D. level. This includes a G.P.A. of at least 3.7 (A=4.0) in graduate history courses, exemplary letters from SIUC professors, excellent GRE scores, and the submission of a seminar paper or published article for evaluation by the Graduate Studies Committee. The student must have completed one colloquium/seminar sequence, History 500, 501 and the research tool required for the M.A. Upon approval, the History Department will recommend to the Graduate Dean direct admission to the Ph.D. program. Direct entry into the Ph.D. program from baccalaureate studies is possible for students of exceptional ability. This can be demonstrated through extensive undergraduate course work of superior quality, excellent GRE scores, proficiency in research tools, previous research experience, and letters of recommendation. Students who have taken course work after the undergraduate degree may not petition for direct entry. Upon approval of the petition, the Department of History will recommend to the Graduate Dean direct admission into the Ph.D. program.

Requirements for the Master of Arts Degree

Upon entrance into the M.A. program all students will select two broad fields of study from the list below and with the advice of the Director of Graduate Studies form an advisory committee to direct a program of studies. At the end of the program students will take comprehensive oral and written examinations in the fields of study.

- United States to 1877
- United States, 1865 to present
- Latin America, Colonial
- Latin America, National
- Europe, Medieval
- Europe, early modern
- Europe, modern
- Britain, modern
- East Asia
- Africa
- Middle East

At the beginning of their studies, M.A. students will also select one of two tracks: the thesis or the two seminar-paper option.

The first option requires a thesis that demonstrates the candidate's capacity to carry out independent and original research. A student who chooses this option should, with

the approval of the director of graduate studies, select a thesis adviser and a thesis topic by the end of the first full-time semester in the program. Up to six semester hours may be taken in thesis research.

A candidate must submit an acceptable thesis and pass a comprehensive oral examination covering the selected field of concentration. He or she also must take at least one research seminar in which a paper will be written.

A candidate choosing the two seminar-paper option must complete two research papers with a grade of *A* or *B*. These papers are normally to be prepared in the department's regularly scheduled research seminars. A copy of one paper must be filed with the Graduate School; copies of both papers must be filed with the department.

History may be chosen as a minor when a student's program of study allows for a graduate minor or as a teaching specialty for the Master of Science in Education degree major with a major in secondary education or higher education.

Students enrolled in the Master of Arts degree program must consult with the director of graduate studies in the Department of History before registering for courses. Students enrolled in either of the Master of Science in Education degree programs must consult the history director of graduate studies and the appropriate department in the College of Education and Human Services before registration.

For the Master of Arts degree major in history, 30 semester hours of satisfactory graduate work are required; at least 20 of these 30 hours must be on the 500 level, including 500 and 501. These 500-level courses must include at least one, and preferably two, colloquium-seminar sequences. Within this general requirement, at least 20 semester hours must be in appropriate history courses, with at least 10 of the 20 hours on the 500 level. The remainder of the hours may be taken in courses on the 400 level.

All candidates for the Master of Arts degree must satisfy the requirement for a research tool. Information on tool requirements is available on the departmental website.

The Doctor of Philosophy Degree

A student seeking the Ph.D. degree in historical studies must pass preliminary examinations and submit a satisfactory dissertation based on independent and original research. In preparation for preliminary examinations, the doctoral student must complete at least twenty-four graduate credit hours. These hours must be completed during a period of not more than four calendar years. The courses and hours of credit necessary for a doctoral student to prepare for preliminary examinations will be determined by the student's advisory committee. All Ph.D. students must include in their 24 hours, two colloquium-seminar sequences with grades of *A* or *B*. The goal is to develop high competence in the selected fields in which the student will be examined. Students are responsible for

preparing three fields in which they will be examined. Two of the three fields will be selected from the following list of general fields:

United States to 1877
 United States since 1865
 Latin America, Colonial
 Latin America, National
 Europe, medieval
 Europe, early modern
 Europe, modern
 Britain, modern
 East Asia, modern
 Africa
 Middle East

The third field is a focused field of study defined in consultation with the student's examination committee. Examples of focused fields are available on the history department website.

The student's advisory committee may require the student to take a diagnostic examination. All Ph.D. students must complete at least six hours of graded graduate work in a field outside North America and Western Europe.

Two research tools are required by the Graduate School. At least one research tool must be a foreign language. Information on requirements for two research tools may be found on the department website.

Courses (HIST)

400-3 American Political History. An analysis of American political history, focusing especially on the origins and development of major political institutions, including Congress, the Presidency, political parties, and the electoral system.

401-3 Atlantic History. This course examines the origins and development of the Atlantic basin as an intercommunication zone for African, European and American societies from the mid-15th century through the early-19th century. Themes include transformation of environments, forced and voluntary migrations, emergence of distinct Atlantic culture communities, development of Atlantic economics and formulation and implementation of Atlantic revolutionary ideologies.

402-3 Greek History. (Same as Classics 402.) History of ancient Greece, focusing on ancient sources and modern scholarship. No language requirement. Prerequisite: consent of instructor.

403-3 American Indians and Government. Use historical analysis to tackle some thorny contemporary issues involving American Indians and government. "Government" may include tribal (pre-colonial and modern-

Students may undertake an internship program under the direction of their advisory committees. More specific information is available on file in the department office and on the website. After completing the course work, fulfilling the research tool requirements, passing the preliminary examinations, and presenting an acceptable dissertation prospectus, the student will be recommended for Ph.D. candidacy and will devote full time to the dissertation. Dissertation subjects must be chosen from either United States history, Latin American history, European history, African history, or history of Asia/the Middle East. The final oral examination will cover the field of the dissertation and related matters.

Cooperative Ph.D. Program

The Departments of History at SIU-Carbondale and SIU-Edwardsville have entered into a cooperative Ph.D. program in Historical Studies which enables students to do work on both campuses. Additional information may be obtained from the Department offices on both campuses.

Assistantships and Fellowships

Fellowships and teaching assistantships are available to qualified graduate students. All carry stipends and remission of tuition. Application for these awards should be submitted by January 10 in order to be considered for the following academic year.

Additional information concerning rules governing the graduate program in history may be obtained by writing to the director of graduate studies, Department of History.

colonial), federal, territorial, state or international bodies, depending on student's research topics. Prerequisites: None, HIST 366 recommended.

404-3 American Indians and Religion. Use historical analysis to investigate issues involving American Indians and religion. "Religion" includes topics such as ancient and modern Native spiritualities, syncretism, Christian mission, pan-Indianism, and New Ageism. Prerequisites: None, HIST 366 recommended.

405-3 Ireland Since 1600. A survey of the history of Ireland and the Irish diaspora since 1600. Coverage of the major events and themes in the history of Ireland in the modern period, with special attention to the crucial experiences of emigration and immigrant destination.

406A-3 Gender, Family, and Sexuality in Pre-Modern Europe. (Same as Women's Studies 406A) A discussion of the history of the family, creation of gender roles, and importance of sexuality from medieval times to the French Revolution.

406B-3 Gender, Family, and Sexuality in Modern Europe. (Same as Women's Studies 406B). a) to the French Revolution; b) from the French Revolution. A

discussion of the history of family, creation of gender roles, and importance of sexuality from medieval times to the present in Europe.

410-3 Europe in the Long Nineteenth Century, 1789-1914. This course offers a topical examination of the history of Europe from the French Revolution to World War I. During this 125-year period Europe underwent significant political and social change, resulting in the gradual undermining of the Ancient Regime, the transformation of politics and the broadening of political participation, new patterns of work and family and new class and gender categories brought about through industrialization, and the rise of nationalism and imperialism. Through focusing on the four broad themes of: 1) the French Revolution; 2) Industrialization; 3) Nationalism and nation-building; and 4) Imperialism and the origins of World War I, this course shall consider the implications of these changes for European and global history.

412A-3 Empire and Social Conflict in the Roman Republic. The social, political and cultural consequences of Roman expansion during the Republican period (c. 700-44 BCE). Focus on reading and analyzing primary sources.

412B-3 Religion and Society in Imperial Rome. Religious, social and cultural conflict and change in the Roman Empire, first through third centuries. Focus on reading and analyzing primary sources.

413-3 Christianization of Power and Society in Late Antiquity. An investigation into the political and social changes involved in the rise of Christian leadership in Western Europe following the fall of the Roman Empire. The course will focus on reading and analyzing primary sources from the fourth through the eighth centuries.

414-3 Europe in the Age of the Crusades. This course examines the development of institutions, society and culture in the Central and Late Middle Ages with a special emphasis on the Crusades and other interactions with Europe's neighbors.

417-3 Ritual and Revolt in Early Modern Europe. This course examines political practices on different levels of European society from the later middle ages through the Enlightenment: court ritual, popular revolts, patronage networks, representative assemblies, and family politics are among the topics covered.

418-3 The Renaissance Exchange. Course employs the traditional Renaissance themes of economic, political and cultural developments in Italy and Europe from 1300-1550 as the framework for detailed examination of European interactions – economic, ideological, religious – with Asia, the Middle East and the Americas.

420-3 Reformation. Concentrates on the movement of religious reforms in the 16th Century. Emphasis on its roots in the past, particularly in earlier expressions of popular piety and to the wider social and political effects in the 16th and 17th centuries.

422-6 (3,3) Intellectual History of Modern Europe. (a) 1600-1815; (b) Since 1815. The first semester will cover

the Age of Reason, the Enlightenment, and Early 19th Century Romanticism. The second semester will cover the period from Marx and Darwin to the Contemporary World.

425-6 (3,3) Twentieth Century Europe. (a) Europe 1914–1945; (b) Since 1945. Political, social, cultural and economic development of the major European states during the present century.

426-3 Cities and Culture in Europe 1870–1914. Cultural and social history focussing on four European cities (Paris, Berlin, Vienna, St. Petersburg) in the Fin-de-siècle period (1870-1914).

427-3 World War I. The first World War (1914-1918) from a variety of perspectives: military, cultural, social and political. Seminar-type format with discussions of topics such as the war's causes, nature of trench warfare, the home front, and political and cultural.

429 Political Violence in Modern Europe. This course will look at various forms of state and political violence in Modern Europe. We will start with the "Reign of Terror" in the French Revolution, then look at the rise of terrorism in the later 19th century. The course will also cover state violence in the 20th century such as WWI, the Shoah, the Gulag. We will examine the "logic" and justification of both state and non-state political violence. No prerequisite.

442-6 (3,3) British Culture and Society, 1660–1914. (a) from 1660 to 1780; (b) 1780 to 1914. An examination of British society and values using such sources as novels, memoirs, music and paintings. The first semester analyzes the emergence of national identities, empire, and a more secular society. The second semester explores industrialization, urbanization, the democratization of politics, growth of empire and changing roles for women and the family.

444-3 The Holocaust. An introduction to Nazi German's systematic mass murder of Europe's Jews and other minorities. Using works of history, literature, and film, we will examine such topics as anti-Semitism, the behavior of "ordinary Germans" during the 30s and 40s, Jewish resistance, Holocaust denial, and memory after the Holocaust.

446-3 Cultural Encounter Between China and the West. A study of the history of cultural encounters between China and the West within the contexts of Eurasian transcontinental and maritime trade, religious and diplomatic missions, military conquests, colonialism, travel and migration. The focus is on the period after 1500.

447-3 Culture and Imperialism. This course will focus on the culture of modern British imperialism. It will examine the impact that the people and commodities of the empire as well as the practices of imperial rule had on modern British culture. The emphasis of the course will be on the implications of "imperial culture" in mediating gender, race and class relations within Britain.

448-3 Gender and Family in Modern United States. (same as WMST 448) This course explores the history of gender and the family in the United States from the late

19th century to the present. Themes to be explored include: the family and the state; motherhood; race and family life; and the role of "the family" in national politics.

449-3 Race and Media in United States History. (Same as Black American Studies 449 and Mass Communication and Media Arts 449) This course explores the history of race in the modern United States by focusing on moments of racial crisis that garnered media attention. The course asks what these moments reveal about the shifting status of "race," as well as how spectacles have changed with the transformation of modern media.

450-6 (3,3) Early America. The evolution of American society from European settlement through the Age of Jefferson, with special emphasis on social and political institutions and thoughts.

451-3 Antebellum America, 1815–1860. The struggle to define the nation in the political, economic and social realms; the emergence of women's rights, slavery, sectional conflict from 1815 to 1860.

452-6 (3,3) United States History 1850-1896. (a) Civil War era; (b) the origins of modern America; reconstruction and nationalization; 1865-1896. The study of the background to the Civil War, the Civil War, Reconstruction and the Gilded Age.

453-6 (3,3) United States History, 1896-1945. (a) 1896-1921; (b) 1921-1945. The history of the United States since the 1890's with emphasis upon politics, political ideas and diplomacy.

455-3 The Conservative View in American History. Readings in American conservative thought, from the eighteenth-century to the present day, including traditionalist, neoconservative and libertarian writers.

456-3 The United States in the 1960s. Examines the roots, events, ideas and legacies of the 1960s through readings in history and literature, and through films and music. Focus will be on the social protest movements of the era and their impact on American society.

457-3 American Environmental History. (Same as Geography 457) An exploration of the attitudes toward and the interaction with the natural resource environment of North American by human settlers. Coverage from the Neolithic Revolution to the present.

458-3 "Bantu Diasporas in Africa and the Atlantic World", This course examines the origins and development of Bantu language and culture groups in Africa and the Atlantic World from the first dispersal of Bantu-speaking people thousands of years ago through the end of slavery in the Americas. Additionally, the course explores the multiple methods and disciplines used to construct histories of Bantu language and culture groups.

459-3 History of American Communism. History of the Communist movement in the United States, from the founding of the Communist Party to its weakening in the McCarthy era. Special emphasis on how Communists affected labor, civil rights and peace movements, as well as American Culture.

460-3 Slavery and The Old South. (Same as Black American Studies 460) This course examines slavery and southern distinctiveness from the colonial period to 1861. Discussion topics include the plantation system, race relations, women and slavery, and southern nationalism.

461-3 Black Americans on the Western Frontier. (Same as Black American Studies 461) This course examines the history of African Americans in the American West. Taking both a chronological and thematic approach, it begins with a discussion of early black explorers in the age of encounter, and ends with a focus on black western towns established in the United States by the 1880's.

462-3 History of American Health and Medicine. Readings and discussion about the development of modern medicine as it affected patients and doctors in the United States. Health care will be traced historically, with discussions of the development of medical science as well as medical organizations and institutions. Approved as CoLA Writing Across the Curriculum course.

463-6 (3,3) History of American Diplomacy. (a) To 1900; (b) Since 1900. General consideration of American foreign policy and the emergence of the United States as world power.

464-3 U.S. Economic and Business History. This course examines the growth of the American economy, economic thought, the evolution of the firm, and the changing place of women and minorities in American business society. It also explores the intersection between business and other institutions in American life, including labor, law, literature, government, education and religion.

465-3 History of Sexuality in America (same as WMST 465). Comprehensive survey of sexuality from colonial times to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research and writing.

466-6 (3,3) History of the American West. (a) Trans-Appalachian Frontier; (b) Trans-Mississippi Frontier. The American frontier and its impact on American society from the colonial period to the 20th century.

467-6 (3, 3) History of American Thought to 1865 and since 1890. (a) To 1865; (b) Since 1890. Major themes include Puritanism, the Enlightenment, Romanticism, Darwinism, Pragmatism, Voices of Discontent, Neo-orthodoxy, liberalism, conservatism, and formulating the modern conscience. Both a and b approved as CoLA Writing Across the Curriculum courses.

468-3 Law and the Social Control of Women in American History. (Same as CCJ 468 and Women's Studies 468) An examination of the ways in which the law affects the behavior, life changes, identities and experiences of women, from colonial times to the present. Team taught by faculty from history and Criminology and Criminal Justice.

469-3 Darwin and the Darwinian World. Readings and discussion on the impact of Charles Darwin on American thought and culture. Focus areas include religion, social

ethics, political criticism, social critics, economics, the genteel tradition, utopian writers, race and imperialism. Approved as CoLA Writing Across the Curriculum course.

470-3 Continuity and Change in Latin America. An in-depth examination of major topics in the history of Latin America since pre-Columbian times, especially themes that have been prominent in recent scholarship. Lectures will be supplemented by outside readings and class discussion.

471-3 History of Modern Japan. An examination of Japanese History from the early Tokugawa period to the present. Major topics include the creation of the Japanese bureaucracy, commercialization and industrialization, and cultural experimentation.

472-3 African States in Crisis. Main focus on African nationalism and the process of decolonization; major social, political and economic developments in independent Africa and the challenges of nation-building; the superpowers and Africa in the politics of the Cold War.

473-3 Comparative Slavery. (Same as Black American Studies 473) A comparative study of slavery from antiquity to its abolition in the 19th century with the differing socio-cultural, political and economic contexts; organized chronologically, regionally and thematically.

474-3 Andean South America. The political, economic, social and cultural development of the Andean nations from pre-Columbian times to the present.

475-3 Disease, Public Health, and Empire. The aim of this course is to provide a broad introduction to the history of disease, public health, and medicine in colonial and postcolonial contexts, with an emphasis on the period from the late nineteenth century to the present. We will be studying the historical impact of formal and informal empire on sickness and health over the last century and a half.

476-3 Women in Chinese History. A social, cultural history of women's lives in China from antiquity to the present reconstructed on the basis of official and unofficial records, artistic representations, literary works, and films.

477-3 Democracy and Development in the Caribbean. The relationships of Latin American countries with the United States have profoundly shaped their economic development and their struggles for democracy. Together, we will work to understand the complex effects that proximity to the United States has had on the political and economic experiences of the countries of the Caribbean and how they have been interpreted by later historians.

479-3 The Cultural Revolution. This course explores the origins, major developments, and social, economic, cultural and psychological legacies of the Great Proletarian Cultural Revolution in China from 1966 to 1976 by critically examining relevant official documents, personal memories, oral histories, literary and artistic works, and films and material objects. All required readings are in English. Open to both graduate students and advance undergraduate students. Prior knowledge of modern Chinese history helpful but not required.

480-6 (3,3) History of China. (a) Late Imperial China, 1350 to 1890; (b) Twentieth Century China, 1890 to the present. An in-depth examination of political, economic, social, and cultural history China from 1350 to the present. The first semester examines the imperial state, gentry and peasants, commercialization and social change in China from 1350 to 1890. The second semester focuses on nation building, ideology and rural-urban culture in 20th Century China.

483-3 Gandhi and Indian Nationalism. This course will focus on the history of Indian nationalism, with a special emphasis on Gandhian nationalism. It will examine the nature of the particular "imagining" of the Indian nation in late colonial India and its implications for the eventual independence and partition of the Indian sub-continent. The emphasis of the course will be on the relation between anti-colonial nationalism and other social movements for justice and equality.

486-3 Arab-Israeli Conflict. This course focuses on the background to, and current dimensions of, the continuing conflict between Israel, the Palestinians and the rest of the Arab world. Beginning with origins of Zionism in the late nineteenth century, it examines, the foundation of Israel, Palestinian responses, and relations between Israel and its Arab neighbors.

488-3 Islamic Political Movements. This course examines the use of Islamic ideals and rhetoric in social and political movements in the Middle East from the nineteenth century to the present. It focuses on political parties such as the Muslim Brotherhood in Egypt, the Welfare Party in Turkey, and Hamas in Palestine.

489-3 Women, State and Religion in the Middle East. (same as WMST 489). Following an introduction to the question of women in Islamic law and Islamic history, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements.

490-1 to 4 Special Readings in History. Supervised readings for students with sufficient background. Prerequisite: registration by special permission only.

491-3 Historiography. Writings of historians from Herodotus to the present.

493-1 to 6 Topics in History. Topics vary with instructor. May be repeated for a maximum of six semester hours provided registrations cover different topics. Topics announced in advance.

494-3 Quantitative Research in History. An introduction to the application of quantitative data and social science methods to historical research.

496A-1 to 9 Internship in History. Supervised field work in public or private agencies or operation where history majors are frequently employed, such as archives and

libraries, government offices, communications media, historic sites and museums. Only three hours may be applied to the major and six hours toward the M.A. degree. Prerequisite: consent of instructor.

496b 1 to 9 Internship in Local History. Field experience in research and preservation related to regionally and nationally recognized historic sites in southern Illinois. Prerequisite: consent of instructor.

497-3 Historical Museums, Sites, Restorations and Archives. The development of museums from antiquity to the present, with emphasis on the United States. Additional topics include historical sites such as battlefields, historic buildings, restorations, monuments and archives. Also examines the purposes and functions of the museum and the tasks of professionals employed in museums of interpretative centers. Given in cooperation with the University Museum.

498-3 Oral History, Story-Telling, and Media. (same as RT 455). This course will develop an appreciation of the field of oral history, methodological concerns, and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Prerequisites: Junior or Senior standing.

500-3 The Historian's Craft. Examination of historical methodology and recent trends in historiography. How historians conduct research and convey the results of it. Special treatment of selected topics of historiography. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers.

501-4 Recent Historiography. Trends in historical writing and historical interpretation in the 20th Century. Required of M.A. degree students. Ph.D. degree students should consult graduate advisers.

522-4 to 15 (4 per semester) Colloquium in European History. Group reading and discussion about major periods, subregions and themes in European history. May be repeated as instructors and topics vary.

523-4 to 20 (4 per semester) Research Seminar in European History. Research and writing on selected topics in European history. Students will prepare a major paper. May be repeated as topics and instructors vary.

551-4 Colloquium in Middle East History. Group reading and discussion about major periods, subregions, and themes in the history of the Middle East and the Islamic world. May be repeated as topics vary.

552-4 Research Seminar in Middle East History. Research and writing on selected topics in the history of the Middle East and the Islamic world. Students will prepare a major paper. May be repeated as topics vary.

554-4 (4 per semester) Colloquium in United States History. Group reading and discussion about major periods, subregions and themes in United States history. May be repeated as topics and instructors vary.

555-4 to 20 (4 per semester) Research Seminar in United States History. Research and writing on selected topics in United States history. Students will prepare a major paper. May be repeated as topics and instructors vary.

570-4 to 12 (4 per semester) Research Seminar in Latin American History. Research and writing on selected topics in Latin American history. Students will prepare a major paper. May be repeated as topics vary.

571-4 (4 per semester) Colloquium in Latin American History. Group reading and discussion about major periods, subregions and themes in Latin American history. May be repeated as instructors and topics vary.

580-4 to 12 (4 per semester) Research Seminar in Asian History. Research and writing on selected topics in Asian history. Students will prepare a major paper. May be repeated as topics vary.

581-4 (4 per semester) Colloquium in Asian History. Group reading and discussion about major periods, subregions and themes in Asian history. May be repeated as instructors and topics vary.

582-4 (4 per semester) Colloquium in World History. Group reading and discussion about major periods, subregions and themes in world history. May be repeated as instructors and topics vary.

583-4 to 12 (4 per semester) Research Seminar in World History. Research and writing selected topics in World History. Students will prepare a major paper. May be repeated as topics vary.

584-4 (4 per semester) Colloquium in Comparative History. Group reading and discussion relating to cross-cultural or other comparative approaches in history. May be repeated as instructors and topics vary.

585-4 to 8 (4,4) Research Seminar in Comparative History. Research on selected topics employing cross-cultural or other comparative approaches. Students will prepare a major paper. May be repeated as topics vary.

586-4 (4 per semester) Colloquium in African History. Group reading and discussion about major periods, subregions and themes in African history. May be repeated as instructors and topics vary.

587-4 to 12 (4 per semester) Research Seminar in African History. Research and writing on selected topics in African history. Students will prepare a major paper. May be repeated as topics vary.

590-1 to 8 (1 to 3 per semester) Readings in History. Individual readings. Registration by special permission only. Student must obtain the consent of the faculty member involved. M.A. degree students are limited to a maximum of 4 hours toward the 30-hour requirement. Graded *S/U* only. Prerequisite: registration by special permission only.

591-2 to 5 Independent Investigation. Graded *S/U* only. Prerequisite: doctoral standing and consent of graduate adviser.

596-3 Tutorial in History. Research and writing in history in close consultation with an instructor to produce a major paper on a selected topic. This course may count toward graduation as a seminar and the paper will be placed on file in the Department of History. Students may take this course only once at the M.A. level and once at the Ph.D. level. Prerequisite: consent of the director of graduate studies.

597-1 to 9 (1 to 3 per semester) Practicum in Teaching College-Level History. Students will learn how to lead discussion sections and/or to teach independent courses at the college level. M.A. or Ph.D. students assigned for the first time as a discussion leader must take this course. The course also is required for Ph.D. students who are teaching their own courses for the first time. Graded *S/U* only. Prerequisite: open only to graduate students in history with the consent of the director of graduate studies.

598-1 to 9 Graduate Internship in History. Supervised field work in occupationally related fields in public history, teaching, university publishing, historical editing. Programs of field work will be designated by students in consultation with their advisory committees. Students at the Ph.D. level can take as many as 9 hours in the course of their studies. Graded *S/U* or *DEF*.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 30 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

INTERACTIVE MULTIMEDIA

(See Mass Communication and Media Arts for program description.)

JOURNALISM

(See Mass Communication and Media Arts for program description.)

KINESIOLOGY

<http://web.coehs.siu.edu/Public/kinesblinde@siu.edu>

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Ackerman, Kenneth, Assistant Professor, *Emeritus*, M.A., Michigan State University, 1959; 1969.

Anton, Philip M., Assistant Professor, Ph.D., University of Northern Colorado, 2006; 2007. Exercise Physiology.

Becque, M. Daniel, Associate Professor, Ph.D., University of Michigan, 1988; 1990. Exercise Physiology.

Blinde, Elaine M., Professor and *Chair*, Ph.D., University of Illinois, 1987; 1987. Sociology of Sport.

Brechtelsbauer, Kay, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1980; 1965.

Carroll, Peter, Assistant Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1970; 1969. **Good, Larry**, Associate Professor, *Emeritus*, Ed.D., Temple University, 1968; 1967.

Knapp, Bobbi, Assistant Professor, Ph.D., University of Iowa, 2008; 2009. Sport Studies.

Knowlton, Ronald, Professor *Emeritus*, Ph.D., University of Illinois, 1961; 1961.

Olson, Michael, Assistant Professor, Ph.D., Louisiana State University, 2006; 2006. Biomechanics.

Park, Meungguk, Assistant Professor, Ph.D., The Ohio State University, 2005; 2005. Sport Management.

Parry, Thomas, Assistant Professor, Ph.D., Indiana University, 2009; 2009. Physical Education Teacher Education.

Partridge, Julie, Assistant Professor, Ph.D., University of Northern Colorado, 2003; 2004. Sport and Exercise Psychology.

Porter, Jared, Assistant Professor, Ph.D., Louisiana State University, 2008; 2008. Motor Behavior.

Potter, Marjorie Bond, Professor, *Emerita*, Ph.D., University of Southern California, 1958; 1961.

Wallace, Julianne, Assistant Professor, Ph.D., Iowa State University, 2004; 2004. Exercise Physiology.

West, Charlotte, Professor, *Emerita*, Ph.D., University of Wisconsin, 1969; 1957.

Wilson, Donna, Associate Professor, M.F.A., University of Oklahoma, 1975; 1986. Dance.

Yoh, Taeho, Associate Professor, Ph.D., Florida State University, 2001; 2001. Sport Management.

Graduate courses in kinesiology are offered toward the Master of Science in Education degree with a major in kinesiology.

Two study tracks are available:

1. Sport Studies (with specializations in Sport Management, Social Psychology of Sport)
2. Exercise Science

Options for Sport Studies Program (36 Hours)

Requires a minimum of 30 semester hours of credit plus one of the following 6-hour options:

- Thesis — KIN 599, 6 hours
- Research Project— KIN 592, 3 hours
Additional Class, 3 hours
- Professional Development Project — KIN 594, 3 hours
Additional Class, 3 hours
- Internship — KIN 555, 6 hours

The following are required courses in Sport Studies: KIN 409, KIN 410, KIN 415, KIN 550, KIN 560 (or approved substitutes).

Options for Exercise Science Program (31 Hours)

Requires a minimum of 25 semester hours of credit plus one of the following 6-hour options:

- Thesis — KIN 599, 6 hours
- Research Project — KIN 592, 3 hours

Additional Class, 3 hours

The following are required courses in Exercise Science: KIN 408, KIN 420, KIN 421, KIN 511, KIN 520, KIN 530 (or approved substitutes).

Criteria for Unconditional Admission

1. Admission to the Graduate School which requires a 2.70/4.00 for all work leading to a completed bachelor's degree and a completed application form.
2. Three completed "Request for Recommendation" forms provided by the Department of Kinesiology.
3. A review of the application by the appropriate faculty and a willingness of a faculty member to serve as the program advisor for the applicant.
4. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admission to Graduate Study in Kinesiology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

A degree in Kinesiology is not required for admission into the graduate program. An individual program in Exercise Science or Sport Studies will be developed for the student. Completed applications are reviewed as they are received. Up to but not exceeding 12 hours of B-grade or higher

transfer credits will be considered by the department for application to the course work requirement and, for advisement purposes, should be considered during the first semester in the program.

Requirements

All students are required to take KIN 500, Techniques of Research, and a graduate class in statistical procedures. Additional requirements for the degree are specific to the respective areas of either Exercise Science or Sports Studies. All students must pass a comprehensive examination which may be taken after the major portion of the course work has been completed. If the research project option is selected, submission of a bound copy of the completed Research Project must comply with the rules of the Graduate School. If the thesis option is selected submission of the thesis will be electronic and must comply with the rules of the Graduate School. Copies of the completed Thesis or Research Project must be deposited with the Department of Kinesiology by the student.

Graduate Assistantships

A limited number of graduate assistantships are available on a competitive basis to students in a degree program. The Graduate Teaching Assistantships are for instruction in the undergraduate program and are available to applicants who have appropriate qualifications relevant to the teaching area. Applications may be obtained from the Chair of the Department of Kinesiology and they are reviewed by a committee independently of the admissions process. In order to hold a graduate assistantship, a student must be registered as a full time student (8 hours, fall/spring; 3 hours, summer) during the semester of appointment.

Certificate in Conflict Resolution

The Department of Kinesiology participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers KIN 416 as a course that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see the section Certificate Programs in Chapter One of the Catalog.

Courses (KIN)

Courses in this department may require the purchase of supplemental materials.

400-3 Psychology of Injury. This course will explore the theory and research related to the psychological aspects of injury and injury rehabilitation. The focus is on theory and application. Case studies will be used to explore assessment and intervention approaches relevant for different levels of athletic training, sports medicine and sport psychology professionals.

407-4 Rehabilitation of Athletic Injuries. This course provides the athletic training student with the theoretical background and practical application of principles and techniques of rehabilitation of athletic related injuries. This course also includes laboratory experiences in rehabilitation of athletic related injuries. Prerequisite: admission into Athletic Training Education Program or permission of instructor.

408-3 Advanced Exercise Prescription. Advanced exercise prescription provides an analysis of physical fitness as it relates to the total well-being of the individual. The course contains specific units on fitness parameters, hypokinetic disease, stress, current levels of physical fitness, but emphasizes the creation of training programs. The course contains exercise prescription for healthy, at risk, overweight and chronically ill populations. Prerequisite: KINS 382 and KIN 320.

409-3 Social Aspects of Sport and Physical Activity. This course presents the theoretical and empirical foundations of sport sociology. A research-based approach is used to explore the relationship of sport to various social institutions, as well as the role of social processes (e.g.,

socialization, discrimination, stratification, conflict) in sport and physical activity contexts.

410-3 Psychological Aspects of Sport and Physical Activity. This survey course presents the theoretical and empirical foundations of sport psychology. Operating from a conceptual rather than an applied framework, the class develops an understanding of social psychological phenomenon and processes related to participation in sport and physical activity (e.g., personality, anxiety, arousal, achievement motivation, social facilitation, aggression, pro-social behavior, group dynamics.)

412-3 Research and Practice in Applied Sport Psychology. This course examines current research and practice in applied sport psychology. Emphasis will be placed on moving from theory into practice on sport-specific individual differences, motivational approaches and interventions.

415-3 Foundations of Sport and Fitness Management. An introduction to broad concepts and issues regarding the management of health clubs, corporate fitness programs; and various components of amateur and professional sport organizations. Students will investigate foundational aspects of sport and fitness management, examine requirements for operating successful programs, and gain insight into various career opportunities.

416-2 Introduction to Team Building. The purpose of this course is to acquaint students, teachers, coaches and administrators with the "team building model". The course will focus on icebreakers, trust and communication initiatives, problem solving skills and processing. The goal of this introductory course is for the participants to become

familiar and acquire team building skills, to develop a workable team building model and initiate the plan in the classroom or workplace.

418-2 Administration of Aquatics. The study of comprehensive aquatic programs, their implementation and coordination.

420-3 Physiological Effects of Motor Activity. The general physiological effects of motor activity upon the structure and function of body organs; specific effect of exercise on the muscular system. Requires purchase of laboratory manual. Prerequisite: Physiology 201 and KIN 320.

421-3 Principles of Skeletal Muscle Action. The neural, physiological and mechanical basis of skeletal muscle action and plasticity in relation to the expression of strength and power. Prerequisite: Physiology 20201 and KIN 320.

425-2 Current Topics in Athletic Training. This course is designed to study and discuss current issues in athletic training and the health care of the athlete.

426-2 Advanced Techniques and Research in Therapeutic Modalities. Specifically designed for the student who wishes to become an athletic trainer and gain knowledge in the application and current research in therapeutic modalities.

427-3 Organization and Administration in Athletic Training. This course is designed to study and discuss the concepts of organization and administration in the health care of athletes and physically active individuals. Prerequisite: Admission into the Athletic Training Education Program or consent of instructor.

428-3 Physical Activity and Exercise for Older Adults. This course is designed to introduce the student to physical changes of the older person with reference to activity and exercise and to teach the student about rational activity and exercise programs for the older person with consideration of the care and prevention of typical injuries that may occur with such programs. Prerequisite: KIN 320.

493-2 to 4 Individual Research. The selection, investigation, and writing of a research topic under supervision of an instructor. (a) Dance. (b) Kinesiology. (c) Measurement. (d) Motor development. (e) Physiology of exercise. (f) History and philosophy. (g) Motor learning. (h) Psycho-social aspects and (i) Sport management. Written report required. Prerequisite: consent of instructor.

494-2 (1,1) Practicum in Kinesiology. Supervised practical experience at the appropriate level in selected kinesiology activities in conjunction with class work. Work may be in the complete administration of a tournament, field testing, individual or group work with special populations, administration of athletics or planning kinesiology facilities. Prerequisite: consent of adviser.

500-3 Techniques of Research. Study of research methods and critical analysis of research literature specifically applied to the areas of sport exercise and motor performance. Prerequisite: consent of advisor.

502-3 Methods of Interview Research in Kinesiology. Seminar course to familiarize students with the theory and techniques of interview research, and to demonstrate the application of this research method to kinesiology. Students will engage in a group interview project focusing on a selected issue in kinesiology and an individual project utilizing interview research in their specialty area of kinesiology. Prerequisite: 500 or consent of instructor.

503-2 Seminar in Kinesiology. Making a systematic analysis of problems and issues encountered in the conduct of kinesiology. Selection of a problem or issue that is a concern to Kinesiology and suggestion of solutions.

505-3 to 12 (3 per topic) Topical Seminar in Kinesiology. Students may concentrate on different topics each semester dependent upon both the interests of the students and the expertise of the graduate faculty. Prerequisite: consent of instructor.

506-3 Medical Aspects of Fitness. This course is a presentation/discussion style course in which students will examine and discuss the principles of exercise testing and prescription for individuals from a wide variety of disease/disability backgrounds. Discussion will include issues of caution/contradiction for various forms of exercise, the role of exercise as a therapeutic modality and exercise as a means of preventive medicine. Prerequisite: KIN 420.

507-3 Organizational Behavior in Sport. This course provides students with an examination of fundamental theories and practices related to behavior of individual and groups in sport organizations. The focus will be on the practical application of the theories to the actions of sport and physical activity managers. Special emphasis will be on: ethics organizations, leadership, managerial decision making, motivation, organizational commitment, and managing a diverse work force.

508-3 Administration of Athletics. Designed to present a broad view of the role, structure and governance of interscholastic and intercollegiate athletics programs. This course will enable students to develop and comprehend current knowledge, theories and practices in athletic management which operate within a framework of state and national governance policies and rules.

509-3 Administrative Theory and Practice in Kinesiology. Selected administrative processes in kinesiology and the application of theory to the processes. The course attempts to systematize concepts, insights and propositions into a usable form, to increase the understanding of administrative problems, and to expand existing knowledge and thought about behavioral phenomena. Prerequisite: 503 for those with an administrative emphasis.

510-3 Motor Development. In-depth study of the development of gross motor skills from infancy through adolescence, the biological and environmental variables that affect motor development, and individual differences in attaining motor proficiency. In addition, selected current

issues in motor development will be examined. No prerequisite.

511-3 Biochemical Analysis of Human Movement. Biomechanical concepts will be reviewed, as well as discussion concerning tissue mechanics, and the integrations of the neural control of movement. Importance will be placed on application of mechanical principles when analyzing basic human movements. Includes completion of a topical research paper. Prerequisite: 321 or equivalent.

512-3 Biomechanics of Human Motion. Methods of data collecting and analyzing the biomechanics of human motion under normal and pathological conditions are covered. Students complete a biomechanical study for a one segment motion.

515-3 Body Composition and Human Physical Performance. Physical dimensions of the human body as they influence motor performance and are modified by protracted physical exercise. Prerequisite: 420 or equivalent.

517-3 Athletic and Kinesiology Facilities Design, Construction, and Maintenance. This course examines the principles and states of planning to manage an Athletic and Kinesiology facility. Basic principles of design, construction, maintenance and how to manage facilities based upon program characteristics.

520-3 Metabolic Analysis of Human Activity. Metabolic principles pertinent to human physical performance with emphasis on sport, exercise and occupational activity analysis. A detailed study of oxygen utilization, oxygen debt, mechanisms of oxygen transport as they relate to physiological homeostasis in localized and total body motor activity. Emphasis on the laboratory study of aerobic and anaerobic performance. Prerequisite: 420 or equivalent.

525-3 Motor Learning-Theories of Research. This course will provide a theory and research foundation for understanding motor skill acquisition and factors that influence the learning of motor skills. This foundation is important to develop research understanding of motor skill learning, and to design effective practice conditions that enhance learning. Various topics related to the cognitive and motor processes influencing motor skill learning will be discussed.

530-3 Exercise Psychology. This course explores the theory and research related to the psychological and social aspects of exercise and how exercise may impact the individual's psychological health and behavior. The focus is on theory and application. It covers theories and models of exercise behavior, psychosocial outcomes of exercise, social factors in exercise behavior, and physical activity interventions.

540-3 Sport Promotions. This course provides the theoretical foundation of promotions specific to the sport industry. It will include professional applications to profit and non-profit sport organizations.

550-3 Legal Aspects of Sport and Physical Activity. A course designed to acquaint student with legal research and the role that law plays in governing the kinesiology, sport and fitness industries. The student will actively research various theories of law and how they affect the nature of kinesiology, sport fitness activity, the participants and consumers. An additional focus will be on specific situations that give rise to injury and subsequent law suits.

555-1 to 6 Internship in Sport Management. The internship is a culminating experience directly related to the student's intended employment or area of interest. It will, therefore, normally be taken after the predominance of course work is completed. The internship may be completed in any appropriate setting as judged by the faculty associated with the area of sport management. All conditions of placement, conduct and evaluation of the internship will be under the jurisdiction of the appropriate faculty. Graded *S/U* only.

560-3 Gender and Sport: Sociological and Psychological Perspectives. (Same as Women's Studies 560). This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts.

580-3 Financial Aspects of Sport. The primary goal of this course is to provide students with a basic knowledge and understanding of the principles, processes, and strategies related to the financial aspects of sport organizations, which consist of professional sport franchises, college athletic departments, community recreation programs, etc. The focus will be on the many conventional and innovative revenue acquisition methods applicable to sport oriented organizations. In addition to the basic accounting concepts and budgeting techniques, this course will address current topics in the field of sport financing, including: tax support, municipal and corporate bonds, economic impact analysis, fundraising, licensing, ticket sales, concessions, and corporate sponsorship.

590-1 to 4 Readings in Kinesiology. Supervised readings in selected subjects. Prerequisite: consent of adviser and department chair.

592-2 to 8 Research in Kinesiology. Plan, conduct, and report assigned research studies. Masters students may take up to three credit hours. Doctoral students must enroll for a minimum of six credit hours. Graded *S/U* only. Prerequisite: 500 or equivalent, consent of instructor.

594-3 Professional Development Project. Supervised independent work leading to the production of a professional development project that can be utilized in the student's professional career. The exact nature of the project is to be determined by the student and the respective graduate advisor. An additional graduate faculty member in the student's area of study also must approve

the project before the student begins work. Graded *S/U* only. Prerequisite: consent of advisor.

599-1 to 6 Thesis. Graded *S/U* Prerequisite: 500 or equivalent.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

LEGAL STUDIES

<http://www.law.siu.edu/>

School of Law

Graduate Faculty:

Adams, Jill, Associate Professor, J.D., University of New Mexico, 1982; 1988.

Alexander, Peter, Professor, J.D., Northeastern University School of Law, 1983; 2003.

Anderson, Cheryl, Associate Professor, J.D., University of North Dakota School of Law; LL.M., Temple University School of Law, 1988; 1995; 1998.

Basanta, Eugene, SO. IL Healthcare Professor of Law, J.D., University of Kentucky; LL.M., Temple University School of Law, 1980; 1980.

Behan, Chris, Assistant Professor, J.D., Brigham Young University J. Reuben Clark Law School; LL.M., Judge Advocate's General School, 1995; 2003; 2006.

Beyler, Keith, Professor, J.D., University of Chicago, 1974; 1982.

Britton, Thomas, Associate Professor, and *Director of Graduate Legal Studies*, M.S. Educ., J.D., Southern Illinois University School of Law, 1973; 1976; 1992.

Buys, Cindy, Associate Professor and *Director of International Law Programs*, J.D., Syracuse University School of Law; LL.M., Georgetown University Law Center, 1991; 1999; 2001.

Drennan, William, Assistant Professor, J.D., LL.M., LL.M., Washington University St. Louis, 1985; 1997; 2003; 2005.

Gross, Leonard, Professor, J.D., Boston University, 1976; 1983.

Houdek, Frank, Professor and *Interim Dean*, J.D., M.L.S., University of California at Los Angeles, 1974; 1976; 1985.

Lee, Mark, Professor, J.D., University of Texas, 1974; 1977.

Liemer, Sue, Associate Professor and *Director of Lawyering Skills*, J.D., University of Virginia, 1986; 2000.

Lind, Douglas W., Associate Professor and *Director of the Law Library*, J.D., Valparaiso University School of Law, M.I.L.S., University of Michigan, 1992; 1994; 2007.

Lindsey, R. Hokulei, Assistant Professor, J.D., University of Hawaii William S. Richardson School of Law; LL.M., University of Wisconsin Law School, 2002 2006; 2006.

McCubbin, Patricia, Associate Professor, J.D., University of Virginia School of Law, 1990; 2000.

McGreal, Paul, Professor and *Associate Dean for Academic Affairs*, J.D., Southern Methodist University, Dedman School of Law; LL.M. Yale Law School, 1992; 1994; 2006

Noble-Allgire, Alice, Professor, J.D., Southern Illinois University Carbondale, 1990; 1993.

Robertson, R.J., Professor, J.D., University of Missouri-Columbia School of Law, 1976; 1982.

Rudasill, Mary, Associate Professor, *Emeritus*, J.D., Southern Illinois University School of Law, 1980; 1986.

Schmitz, Suzanne, Assistant Professor and *Director of the Academic Success Program*, M.S.Ed., Southern Illinois University, Edwardsville; J.D., Saint Louis University School of Law, 1976; 1981; 1993.

Schroeder, William, Professor, J.D., University of Illinois, College of Law; LL.M., Harvard Law School, 1969; 1977; 1984.

Schultz, Mark F., Assistant Professor, J.D., George Washington University, 1993; 2003.

Wester-Mittan, Candle, Assistant Professor and Access Services Librarian, J.D., University of Nebraska College of Law; M.S.L.I.S., University of Illinois at Urbana-Champaign, 2004; 2006; 2006.

Master of Legal Studies

The Master of Legal Studies (M.L.S.) is a post-baccalaureate degree program designed for those who wish an advanced knowledge of the law and the legal system but who do not wish to become lawyers. The M.L.S. course of study is designed to provide non-lawyer professionals with the skills and knowledge necessary to identify, understand, and respond to the legal issues a professional who interacts with the legal system is likely to encounter. The M.L.S. program is offered as a general degree in legal studies, or with a concentration in health law and policy. Those pursuing the more general course of study, however, will be encouraged, to design a program within the curricular offerings of the law school which meets their more specific needs.

M.L.S. General

The general M.L.S. program is directed at serving those who are professionals in fields where there is significant legal regulation, and who need an introduction into basic legal principles, but who do not aspire to become lawyers themselves. This program is particularly relevant to those who deal with a complex array of state and federal legal requirements in performing their daily tasks. As the complexity of the modern workplace intensifies, due largely to increasing regulatory requirements, the demand for individuals with a knowledge of and a comfort level with the law will increase. The general M.L.S. program will help satisfy this demand.

M.L.S. in Health Law and Policy

The M.L.S. with a concentration in health law and policy is designed for those who are working (or desire to work) in health care fields and who need an introduction to the basic legal principles that are important to the health care field, but who do not wish to become lawyers themselves. In particular, physicians, hospital administrators, risk management specialists, human resources professionals in the health care field, employees of insurance companies insurance, and other health care professionals deal on regular basis with legal issues ranging from state and federal regulation of the delivery of health care services to the privacy of health-related patient information. In addition, non-lawyer government workers who are employed by agencies that regulate health-care providers also would benefit from an exposure to these basic legal principles and their application to the health care field.

Curriculum and Requirements

Coursework. To earn the M.L.S. degree students are required to complete thirty credit hours. The curriculum is designed to introduce students to legal study through two courses, Introduction to American Law and Legal System, and Legal Writing and Research for Non-Lawyers. In addition to these required courses (three credit hours each), students will complete the remainder of their course work by taking regular law school classes. Those opting for the health and law policy concentration complete essentially the same curriculum as other M.L.S. students, but are required to complete a minimum of 12 hours in health care-related courses.

Research. Candidates must also write a thesis that demonstrates the ability to research and write at an acceptable graduate level. The thesis will be written under the supervision of a faculty sponsor approved for such

purpose by the Director of Graduate Legal Studies. A candidate will earn three credit hours for successful completion of the thesis. The thesis requirement may be satisfied by successful completion of a course that satisfies the law school's senior writing requirement.

Time Limitation. M.L.S. students must complete all requirements for the M.L.S. program within four-years of first matriculation.

Admission Criteria and Procedure

Admission to the M.L.S. program requires positive action by the Graduate Admissions Committee. Admission is based on demonstration of academic and professional achievement, and academic and professional promise. Those whose first language is other than English must also demonstrate proficiency in English. In order to matriculate, students must also be admitted to the SIUC Graduate School. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Legal Studies. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank

Additional information regarding application, and an Application Packet, is available from:

Director of Graduate Legal Studies
School of Law
Lesar Law Building
1150 Douglas Drive
Carbondale, Illinois 62901-6804
or at:
<http://www.law.siu.edu>

Courses (LAW)

498-3 Introduction to American Law and Legal System. This course is designed as an introduction to the law and the legal system of the United States for students enrolled in the Master of Legal Studies (M.L.S.) program, and for students enrolled in the LL.M. program who received their legal training in a non-common law country. The course introduces the basic organization of the legal system, basic legal concepts, the common law and the case method of studying the common law, statutory law, and legal synthesis. Prerequisite: Consent of the Director of Graduate Legal Studies.

499-3 Legal Writing and Research for Non Lawyers. This course is designed as an introduction to the legal writing and legal research for students enrolled in the Master of Legal Studies (M.L.S.) program, and for students enrolled in the LL.M. program who received their legal training in a non-common law country. The course introduces students to the basic purposes and form of legal

writing, including case analysis and synthesis, and to basic legal research methodologies. The course will emphasize research materials available on the Internet, since those enrolled are unlikely to have regular access to a law library. Prerequisite: Consent of the Director of Graduate Legal Studies.

611-1 Continuing Enrollment – Master of Legal Studies. For those graduate students who have not finished the M.L.S. degree program and who are in the process of working on completing their requirements. The student must have completed a minimum of required work before being eligible to register for this course.

For a complete list of law courses:

<http://www.law.siu.edu/academics/pdf/CourseDes.pdf>

LINGUISTICS

www.linguistics.siu.edu/
ling@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Angelis, Paul, Associate Professor, *Emeritus*, Ph.D., Georgetown University, 1968; 1981.

Baertsch, Karen S., Assistant Professor, Ph.D., Indiana University, 2002. Phonology, phonetics, historical linguistics, dialects, Central Asian languages.

Brutten, Sheila, Associate Professor, *Emeritus*, M.A., Southern Illinois University Carbondale, 1965; 1968.

Charkova, Krassimira, Senior Lecturer, Ph.D., Southern Illinois University, 2001. Theory and methods in TESOL, teacher training, research methods in TESOL and linguistics, second language acquisition.

Dotson, John E., Professor, *Emeritus*, Ph.D., Johns Hopkins University, 1969.

Friedenberg, Joan, Professor *Emeritus*, Ph.D., University of Illinois at Urbana-Champaign, 1979; 1994..

Fuller, Janet, Associate Professor, Ph.D., University of South Carolina, 1997; 1997. Language contact and bilingualism, discourse analysis, sociolinguistics, pragmatics, second language acquisition.

Gilbert, Glenn G., Professor, *Emeritus*, Ph.D., Harvard University, 1963; 1970.

Halliday, Laura J., Senior Lecturer, Ph.D., Southern Illinois University, 2005. TESOL theory and methods, ESL writing, pedagogical grammar.

Kim, Alan, Associate Professor, Ph.D., University of Southern California, 1985; 1988. Syntactic theory, functional syntax, semantics, comparative linguistics, Japanese and Korean syntax.

Lakshmanan, Usha, Professor, Ph.D., University of Michigan, 1989; 1990. First and second language acquisition, psycholinguistics, syntactic theory, tamil syntax.

McPherron, Paul, Assistant Professor, Ph.D., University of California, Davis, 2008; 2009. Socio/applied linguistics, critical discourse analysis, TESOL theory and methods, media literacy and multimodal composing.

Montavon, Mary V., Lecturer, *Emeritus* Ph.D., University of Illinois, 2003.

Parish, Charles, Professor, *Emeritus*, Ph.D., University of New Mexico, 1959; 1965.

Perkins, Kyle, Professor, *Emeritus*, Ph.D., University of Michigan, 1976; 1976.

The Department of Linguistics offers programs leading to the Master of Arts degree in applied linguistics and the Master of Arts degree in Teaching English to Speakers of Other Languages (TESOL).

Overview of Graduate Programs

The M.A. program in applied linguistics is designed to give students a broad training in most aspects of contemporary linguistics, including historical linguistics, phonology, pidgins and creoles, psycholinguistics, second language acquisition, sociolinguistics, and syntax. In addition, students will pursue the study of one area in depth through further coursework and thesis research. Graduates of the applied linguistics program frequently go on to more advanced study and research in linguistics leading to the Ph.D. degree.

The M.A. program in TESOL is designed primarily for students who wish to pursue careers in the teaching of English to speakers of other languages either in the United States or abroad. The program combines both theory and practice. In addition to core courses in linguistics, students in the TESOL program are required to take courses in the theory and methods of language teaching and to teach in a supervised practicum in the teaching of oral and written English. Graduates of the TESOL program can go on to advanced study of language learning and teaching or related fields.

For students who are interested in language study but are not committed to either graduate major, the department offers a number of interesting, non-specialist courses which may serve as electives in degree programs such as those offered by the Departments of Anthropology, Communication Disorders and Sciences, English, Foreign Languages and Literatures, Psychology, Speech Communication, and the College of Education and Human Services. A sequence of courses is also available for students wishing to pursue a double major combining applied linguistics or TESOL with other programs at the master's level.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Linguistics. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. Applicants for admission should address inquiries to the Chair, Department of Linguistics, Southern Illinois University Carbondale, Carbondale, IL 62901-4517, USA.

Admission to the Degree Programs

Undergraduate GPA. Applicants for admission to either degree program, in addition to meeting the requirements for admission to the Graduate School, are expected to have undergraduate grade point averages of at least 3.0 (A = 4.0). Applicants with GPAs below 3.0 may be granted conditional

admission. However, students admitted on a conditional basis must earn a graduate GPA of 3.0 after the first 10 hours of letter-graded course work; failure to do so will result in the student being dropped from the program.

Foreign Language Requirement. All students who are native speakers of English must have completed at least one semester of study of a foreign language within the preceding five years (excluding high school) and have achieved a grade of *B* or better. Those students who have achieved proficiency in a foreign language by means other than graded academic study must demonstrate that they have achieved a minimum level of novice-mid as defined in the proficiency guidelines published by the American Council on the Teaching of Foreign Languages. Students may also fulfill this requirement by taking one semester of a foreign language with a grade of *B* or better while they are enrolled in their M.A. program. In recognition of their experience in learning English, international students who have learned English as a second or foreign language are exempt from this requirement.

TOEFL and GRE. International student applicants who are not native speakers of English must achieve a score of at least 570 (paper) or 230 (computer) on the Test of English as a Foreign Language (TOEFL). Although submission of scores on the Graduate Record Examination (GRE) is not required for admission to the Graduate School nor to the department, applicants are advised that high GRE scores put them at a competitive advantage when applying for university fellowships or departmental assistantships.

Academic Retention

Academic Probation. As required by the Graduate School, any student whose GPA falls below 3.0 will be placed on academic probation. Any student who fails to return to good standing after one term on academic probation will not be eligible to hold a graduate assistantship. Any student who fails to return to good standing after two terms on academic probation will be dropped from the program. Any student who accumulates three or more incompletes will be put on academic probation and may return to good standing by reducing the number of incompletes to two or fewer.

Minimum Grades in Core Courses. As described below, both M.A. programs include a number of core courses which are required of all students. These courses must be passed with a grade of *B* or better. Students who receive a grade lower than *B* on a core course must take the course again. They will register officially for the course and will be granted a letter of permission to do so from the department. Both grades will be counted in calculating GPA. Students who need to repeat core courses may take other courses concurrently or sequentially for which the core courses are prerequisites.

Grade Point Average to Graduate. All graduate work must be completed with an overall GPA of 3.0.

Master of Arts Degree in Applied Linguistics

The Master of Arts degree in applied linguistics encompasses a broad range of required core courses plus the opportunity to pursue the study of one area in depth through elective courses and a thesis. A minimum of 39 semester hours is required for the M.A. in applied linguistics, of which a minimum of three and a maximum of six may be allowed for the thesis (LING 599). A minimum of 15 semester hours must be at the 500 level.

Required Courses for the M.A. in Applied Linguistics (21 semester hours)

LING 402-3	Phonetics
LING 415-3	Sociolinguistics
LING 445-3	Psycholinguistics
LING 503-3	Phonological Theories
LING 505-3	The Professional Study of Linguistics
LING 506-3	Historical Linguistics
LING 508-3	Syntactic Theory

Elective courses may be selected from courses offered within the department or from courses taught by faculty in the Departments of Anthropology, Communication Disorders and Sciences, Computer Science, English, Foreign Languages and Literatures, Philosophy, Psychology, Speech Communication, and the College of Education and Human Services. Where appropriate, students are encouraged to take courses in quantitative and ethnographic research methods taught in the Departments of Educational Psychology and Anthropology. Students are also encouraged to attend the annual summer institutes sponsored by the Linguistic Society of America and TESOL. Credit will be allowed for course work successfully completed in this way.

A thesis is required of all students in the M.A. in applied linguistics program. The thesis is a written summary of a student's independent research conducted while enrolled in one of the department's M.A. programs. A thesis is expected to include a clear statement of the topic, identification of the particular issues to be investigated, a literature review, an explanation of the procedures followed, and an analysis and discussion of research findings. Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as chair of the committee and must be from the Department of Linguistics. The thesis must be submitted to a public oral examination by the student's committee. Detailed information regarding the thesis may be found in *Thesis Policies and Guidelines*, copies of which are available from the department.

Master of Arts Degree in Teaching English to Speakers of Other Languages

The M.A. degree in TESOL blends linguistic science with the art of classroom practice. It prepares students both intellectually and experientially so that as teachers they are capable of making wise and informed choices among different language teaching approaches, methods, and techniques. In addition, students will understand how differences among individual

students, teaching and learning situations, and social structures influence decisions they will be called upon to make as teachers. The TESOL master's program provides a firm and broad foundation in current theories of language and language learning and graduates will be prepared to take on professional careers as teacher educators and curriculum specialists as well as classroom teachers.

There are two options for completing the MA TESOL degree, a thesis option and a non-thesis option. In both cases 33 credits are required. Both options include three components: a group of core courses totaling 18 semester hours, elective courses totaling 9 semester credit hours, and a concentration—either a thesis (thesis option) or additional course work from a selected group of focus courses (non-thesis option) which provides the final 6 semester hours.

Core Courses (18 semester hours)

All students in the MA TESOL program take the following six courses:

- LING 402-3 Phonetics
- LING 505-3 The Professional Study of Linguistics
- LING 531-3 Pedagogical Grammar for TESOL
- LING 541-3 Second Language Acquisition
- LING 570-3 Theory and Methods and Materials of TESOL
- LING 583-3 TESOL Practicum

Elective courses (9 semester hours)

Students can select from a number of elective courses offered each semester. In some cases, courses offered by other departments may be used to complete elective requirements. Faculty advisors work with students to determine which electives will be most appropriate for the student's program. Students are also encouraged to attend summer institutes when offered by the TESOL organization or the Linguistic Society of America. Credit will be allowed for coursework successfully completed in this way.

Thesis (6 semester hours)

Students following the thesis option are required to submit a thesis, which is a written summary of their independent research. The thesis is expected to include a clear

statement of the topic, identification of the particular issues to be investigated, a literature review, an explanation of the procedures followed, and an analysis and discussion of the research findings. Each student writing a thesis must have a thesis committee composed of at least three faculty members, one of whom serves as Chair of the committee and must be from the Department of Linguistics. The thesis must be submitted to a public oral examination by the student's committee. The six credit hours used for the thesis work may be taken in one semester or divided across more than one semester but should coincide with the terms in which the student is actually working on the thesis project. Detailed information regarding the thesis may be found in *Thesis Policies and Guidelines*, copies of which are available from the department.

Focus Courses (6 semester hours)

Students following the non-thesis option are required to take two additional courses beyond those included in the core and elective categories. These courses serve as ones in which students can apply what they have been learning to designated topics, issues, and problems related to the teaching of English to speakers of other languages. These courses are writing intensive, which is to say that they require students to demonstrate their understanding through written assignments; they generally require a final written project. The two courses selected by the student as focus courses must be from the following group of courses:

- LING 470-3 Foundations of Bilingual Education
- LING 472-3 Assessment of Language Minority Students
- LING 543-3 Bilingualism
- LING 573-3 Computer-Assisted Language Learning
- LING 575-3 Language Testing
- LING 582-3 Course Design for TESOL
- LING 584-3 Teaching Composition in a Second Language
- LING 586-3 English for Specific Purposes
- LING 587-3 Teaching Reading in a Second Language

Courses (LING)

The Department of Linguistics offers courses toward the Master of Arts degree in applied linguistics and the Master of Arts degree in teaching of English to speakers of other languages (TESOL).

402-3 Phonetics. Theory and practice of articulatory phonetics.

403-3 English Phonology. Study of English phonology, including phonetics, phonemics and prosodics. Prerequisite: LING 300 or Graduate status or consent of department.

404-3 American Dialects. Regional variation and social stratification of American English. Phonological and syntactic differences among the major dialects of American English.

Prerequisite: LING 300 or Graduate status or consent of department.

406-3 Introduction to Historical Linguistics. (Same as Anthropology 406) An introductory survey of historical and comparative linguistics, including terminology, assumptions and methods of investigation. Satisfies the COLA Writing-Across-the-Curriculum requirement. Not open to graduate students in Linguistics. Prerequisite: LING300, LING 405, and 408 or consent of department.

409-3 Linguistic Structure of Modern German. (Same as German 411.) The descriptive study of phonology, grammatical structure, and vocabulary of modern German with consideration of its structural differences from English and applica-

tion to teaching. Appropriate for students with at least two years of German. Conducted in English.

411-3 The Linguistic Structure of Chinese. (Same as Chinese 410.) Phonology and syntax of Mandarin Chinese. Principal phonological features of major Chinese dialects. Special emphasis on the contrastive analysis between Mandarin Chinese and English. Theoretical implications of Chinese syntax for current linguistic theories. Prerequisite: one year of Chinese or Linguistics 401.

412-3 The Linguistic Structure of Japanese. (Same as Japanese 410.) Inductive approach to the analysis of various aspects (such as phonology, morphology, syntax) of Japanese grammar with emphasis on syntactic structures within any of the current theoretical frameworks such as pragmatics, functionalism and formal linguistics. May include contrastive analysis between Japanese and English, and close examination of theories of comparative-historical linguistics of Japanese and Korean. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: one year of Japanese or one previous course in linguistics or consent of instructor.

414-3 Linguistic Structure of Spanish. (Same as Spanish 411.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching. Not for graduate credit in Linguistics programs.

415-3 Sociolinguistics. (Same as Anthropology 415) History, methodology and future prospects in the study of social dialectology, linguistic geography, multilingualism, languages in contact, pidgin and creole languages, and language planning. Prerequisite: LING 300 or Graduate status or consent of instructor.

416-3 Spanish in the U.S.A. (same as ANTH 416). This course offers a survey of the historical, social, political, linguistic and educational issues surrounding the Spanish language in the United States. Topics to be addressed include Spanish language use and bilingualism, language maintenance and shift, education of Latino populations, Hispanic diversity, and Latino literature.

426-3 Gender, Culture, and Language (same as WMST 426 and ANTH 426) This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological- and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered language use.

430-3 to 6 (3,3) Grammatical Structures. Detailed analysis of the structure of particular languages. May be repeated to a total of six hours credit with consent of instructor. Prerequisite: LING 300 or Graduate status or consent of department.

440-3 to 9 (3 per topic) Topics in Linguistics. Selected topics in theoretical and applied linguistics. May be repeated to a total of six hours credit with consent of instructor.

442-3 Language Planning. Survey of the field of language planning: definitions and typologies, language problems, language treatment, attitudes and beliefs about language, relations between language planning processes and other kinds of social and economic planning, linguistic innovations and other processes of language change, implementation of language policies. Prerequisite: LING 300 or Graduate status or consent of department.

445-3 Psycholinguistics. (Same as Psychology 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Prerequisite: LING 300 or Graduate status or consent of department.

450-3 to 6 (3,3) Language Families. A synchronic survey of particular language families or sub-families. May be repeated to a total of six hours credit with consent of instructor. Prerequisite: LING 300 or Graduate status or consent of department.

470-3 Foundations of Bilingual Education. Required for State of Illinois Bilingual Education Approval. Provides a broad overview of the field of bilingual education, including related terminology; historical, political, social, theoretical, international, economic, cultural, and legal aspects of bilingual education; and educational program models for serving LEP students.

471-3 Bilingual Education Methods and Materials. Required for Illinois Bilingual Approval. Emphasis on US/K-12 schools; methods and materials for: bilingual content, biliteracy, sheltered and multicultural instruction and for ELLS with disabilities; techniques for advocacy for ELLs, writing funding proposals, and conducting program reviews and workshops. Include materials reviews, lesson planning and micro-teaching. Department approval required (student must be bilingual).

472-3 Assessment of Language Minority Students. Required for IL ESL/Bilingual Approval. Assessment concepts and terminology; how to select, administer, and interpret standardized tests for English learners in the U.S. (K-adult) and abroad; develop traditional and alternative classroom tests of language and content instruction. Course includes lectures, readings, class discussions, and individual and group projects.

480-3 to 12 Less Commonly Taught Languages. Elementary course in less commonly taught language. Languages vary. Section (a) corresponds to first semester, section (b) of the same language is a continuation of section (a). Must be taken in (a), (b) sequence when available. Sequence may be repeated with a different language. Prerequisite: for LING 480b: LING 480a

501-3 Approaches to Error Analysis. Theory and methodology of contrastive analysis and error analysis. Application of both methodologies to comparison of English syntactic and phonological structures with those of other languages.

Prerequisite: LING 503 and either LING 508 or LING 531, or consent of instructor.

503-3 Phonological Theories. An examination of the development of phonological theories from the 19th century up to the present. Relationships among various theories and insights into language structures that arise from them are considered. Data analysis within the perspectives of the different theories. Prerequisite: LING 505 and 402 or consent of department.

505-3 The Professional Study of Linguistics. Basic concepts and methods of general linguistics. Fundamentals of the nature, structure and functioning of language. Data analysis and problem solving. Introduction to professional standards and resources available for linguistic research. Course satisfies introduction to linguistics requirement.

506-3 Historical Linguistics. Theories and methods in the study of the history and prehistory of languages and language families. Prerequisite: LING 505, LING 503, and LING 508 or consent of department.

508-3 Syntactic Theory. An examination of the major concepts and issues in generative grammar. Data from diverse languages will be examined. Students will be presented with problems in syntax to solve. They will also carry out an individual project in syntactic analysis. Prerequisite: LING 505 or consent of department.

510-3 History of Linguistics. The history of linguistic inquiry from classical times to the present. Prerequisite: one previous course in linguistics or consent of instructor.

514-3 Linguistic Structure of Spanish. (Same as Spanish 511.) Theory and practice in Spanish pronunciation and study of Spanish grammatical structure, in contrast to English, with application to teaching.

531-3 Pedagogical Grammar. Explores the relationships among language structure, learning and teaching in order to understand the role of grammar in TESOL. Makes students more aware of the way the English language works, the kinds of language that ESL learners produce and why they proceed through certain stages, and understand the role and effects of grammatical consciousness-raising on the development of English as a second language. Prerequisite: LING 570 or consent of department.

540-3 to 6 (3 per topic) Studies in Applied Linguistics. Selected topics in applied linguistics. May be repeated as topics vary to a total of six hours of credit with consent of department. Prerequisite: LING 505 or consent of department.

541-3 Introduction to Second Language Acquisition. Introduction to key concepts and major theoretical and methodological issues in second language acquisition. Major developments in SLA in phonology, morphology, lexis, syntax, semantics and discourse and provides students with hands-on experience in describing and accounting for second language data. Opportunity to design and implement a data-based SLA study in an area of interest to students. Prerequisite: LING 505 or consent of department.

542-3 Advanced Seminar in Second Language Acquisition. Research seminar in second language acquisition on selected topics such as universal grammar in SLA, language transfer, variation in SLA, second language learn ability, etc. Prerequisite: 541 or consent of instructor.

543-3 Bilingualism. A comprehensive introduction to the study of bilingualism. Course will examine the linguistic, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: LING 505 or consent of department.

544-3 Discourse Analysis. (Same as Anthropology 544.) Survey of major approaches to the analysis of spoken or written discourse including speech act theory, pragmatics, interactional sociolinguistics, ethnography of communication, conversation analysis, variation analysis, and critical discourse analysis. Prerequisite: LING 505 or consent of department.

546-3 Conversation Analysis: Pragmatics. (Same as Speech Communication 546.) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames and background understandings. Emphasis on observational research methods and analysis of original data. Prerequisite: consent of instructor.

547-3 Conversation Analysis: Ethnomethodology. (Same as Speech Communication 547) Descriptive study of sequential organization of interaction. Students read research literature and learn methods for transcription and analysis in the conversation analytic tradition. Topics include openings and closings, adjacency pair organization, turn taking, overlap, assessments, pre-sequences, repair, topic, nonvocal activities, response, laughter, storytelling, argument, play and institutional contexts. Prerequisite: consent of instructor.

549-3 Research Methods in Linguistics and TESOL. This course examines basic concepts and principles of quantitative and qualitative methods in Linguistics and TESOL. It prepares students to critically read and understand related research as well as design and carry out their own research projects. It includes analyses of research articles, writing literature reviews, making informed decisions about appropriate methodology and data analyses procedures. Prerequisite: LING 505 or consent of department.

550-3 to 6 Seminar in Theoretical Linguistics. Guided advanced research in (a) syntax and semantics, (b) phonology, (c) sociolinguistics, (d) selected topics. Sections (a) through (c) may be taken only once each. Section (d) may be repeated as topics vary. Prerequisite: consent of department.

551-3 Pragmatics. (Same as Anthropology 551) An investigation of language use in context; this incorporates both social and psychological aspects of language use. Topics to be covered in this course include speech acts; implicature; conversation analysis; and the acquisition of communicative competence by both first and second language learners. Prerequisite: LING 505 or consent of department.

570-3 Methods and Materials of TESOL. Requirement for Illinois ESL/Bilingual Approval. Methods/materials to teach ESL/EFL in the United States (k-adult) and abroad. Promotes eclecticism through reflective practice; overview of methods from early grammar translation to cognitive and communicative, integrated skills, technology and content-based approaches. Lecture, readings, discussion, demonstration, materials review, lesson planning, micro-teaching.

573-3 Computer-Assisted Language Learning. An introduction to the use of microcomputers in the teaching of foreign languages, in particular the teaching of English to speakers of other languages. Course topics include: a survey of existing application programs used in language learning, review of research into the effectiveness of computer-assisted language learning and testing and development of basic skills in designing and programming language learning applications. Prerequisite: 570 or consent of instructor.

575-3 Language Testing. Discussion of different second language (L2) testing purposes, characteristics of good L2 tests, process of L2 test development, evaluation and revision of L2 tests, interpretation and reporting of L2 test results, current trends in L2 testing. Prerequisite: 570 or consent of instructor.

580-3 to 6 Seminar in Special Topics in TESOL. Selected topics in special areas of teaching English to speakers of other languages. (a) Administration of intensive English programs, (b) Teaching English abroad, (c) Selected topics. Sections (a) and (b) may be taken only once each. Section (c) may be repeated as topics vary. Prerequisite: 570 or consent of instructor.

582-3 Course Design for TESOL. A review of issues and procedures in the design and implementation of courses for teaching English to speakers of other languages. Particular attention is given to recent developments such as content-based instruction. All major course components such as setting of objectives, syllabus design, content specification and evaluation are considered. In addition, resources available for addressing these issues will be discussed. Prerequisite: 570 or consent of instructor.

583-3 TESOL Practicum. Class observation and supervised teaching of English to speakers of other languages; meets concurrently with Linguistics 454: Observation and Practice in TESOL and Linguistics 100: Instruction in ESL. Prerequisite: LING 570 or consent of department.

584-3 Teaching Composition in a Second Language. Analysis of current theories of composition in a second language, research on the nature, process, and applications of research for the teaching of writing in a second language. Prerequisite: 570 or consent of instructor.

586-3 English for Specific Purposes. A course designed to familiarize students with key components of English language courses designed for speakers of other languages with specific needs or in well-defined settings. Case studies and sample courses are reviewed and students develop individual projects related to a content area or course component of their choice, e.g., needs assessment, syllabus design,

materials development or teacher training. Prerequisite: 570 or consent of instructor.

587-3 Teaching Reading in a Second Language. Analysis of theories of reading in a second language (L2) and research into the nature of L2 reading. Observation and practice in developing L2 reading materials and teaching techniques under supervision. Prerequisite: 570 or consent of instructor.

588-3 Intercultural Communication. Advances knowledge and understanding of theory, practice, and research in intercultural communication, including the effects of cultural identities and cross-cultural experiences on language, perception and world view. Implications for language learning and teaching are also explored. Prerequisite: LING 505 or consent of department.

589-3 Teaching Vocabulary in a Second Language. The course integrates theory and practice in teaching second language vocabulary. It offers an introduction to concordances and collocations and their use in materials development. Prerequisite: 570 or consent of instructor.

593-1 to 4 Research in Linguistics. Individual research under graduate faculty guidance. Prerequisite: consent of instructor.

597-1 to 8 Readings in Linguistics. Individual readings in linguistics under graduate faculty guidance. Prerequisite: consent of department.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MANAGEMENT

(See Business Administration)

MANUFACTURING SYSTEMS

[www.engr.siu.edu/tech/
deptotech@engr.siu.edu](http://www.engr.siu.edu/tech/deptotech@engr.siu.edu)

COLLEGE OF ENGINEERING

Graduate Faculty:

Besterfield, Dale H., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1971; 1962.

Chang, Feng-Chang, Associate Professor and Director of Engineering Outreach, Ph.D., Ohio State University, 1985; 1991.

Crosby, Garth, Assistant Professor, Ph.D., Florida International University, 2007, 2008.

DeRuntz, Bruce, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2005; 1998.

Dunston, Julie K., Associate Professor, Ph.D., Florida State University, 1995; 1995.

Marusz, Ronald K., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1999.

Savage, Mandara, Associate Professor and *Chair*, Ph.D., Iowa State University, 1999; 1999.

Spezia, Carl J., Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2002; 2005.

Velasco, Tomas, Associate Professor, Ph.D., University of Arkansas, 1991; 1993.

Master of Science in Manufacturing Systems

Graduate work leading to a Master of Science degree in manufacturing systems is offered by the College of Engineering. The objective of the program is to develop quality and management professionals who can plan, coordinate, design, implement, and control the quality function in manufacturing and service companies in order to increase productivity, optimize resources, decrease waste, and improve product quality. Course offerings and research are available in the areas of quality assurance, six sigma, lean manufacturing, project management and reliability. For students with baccalaureate degrees in technology, engineering technology, or engineering, the program provides advanced education in quality and management systems. For individuals with technical degrees, the program provides an excellent continuing education opportunity.

Admission

Candidates for this program must be accepted by the Graduate School and the Department of Technology. Candidates should possess a bachelor's degree with a major in a technical area and have a GPA of no less than 3.0/4.0. A student whose undergraduate training is deficient may be required to take additional courses to compensate for deficiencies identified by the technology graduate program committee.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for admissions to graduate study in manufacturing systems. Applicants may pay this fee by credit card, personal check, cashier's check, or money order made payable to a U.S. bank, if applying electronically. Applicants may request a paper application.

Program Requirements

The program in the thesis option requires a minimum of 30 semester hours of acceptable graduate credit and includes 15 semester hours of manufacturing systems core courses. Students will complete a master's thesis, having six semester hours of thesis (MFGS 599) credit.

Within the 30 semester hour requirement, students must complete five of the six following core courses or their equivalents:

MFGS 510-3 Quality Assurance
MFGS 525-3 Six Sigma Black Belt II
MFGS 530-3 Lean Manufacturing II
MFGS 535-3 Service Quality
MFGS 540-3 Reliability Analysis
MFGS 550-3 Project Leadership

Students not meeting specific course requirements may be required to complete prerequisites from the following list of courses:

IT 450-3 Project Management
IT 465-3 Lean Manufacturing
IT 470a-3 Six Sigma Green Belt
IT470b-3 Six Sigma Green Belt II
IT 480-3 Six Sigma Black Belt

A program of study including the above required courses (15 semester hours), the master's thesis (6 semester hours), and the remaining 9 semester hours will be selected by the graduate adviser and the student.

If a student prefers the non-thesis option, a minimum of 30 semester hours of acceptable graduate credit including the 15 semester hours of core courses is required. The student is expected to take at least 15 semester hours within the major department.

Prerequisite courses listed above that are taken in order to meet specific course requirements can be used to fulfill the remaining nine semester hour requirement for the thesis option and to fulfill the 30 semester hour non-thesis degree requirement.

Additional Information

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about programs, courses, assistantships, and fellowships may be obtained from the College of Engineering or from the chair of the department.

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Courses (MFGS)

505-3 Research Methods. The objective of this course is to familiarize the students with the methods needed in research. Emphasis is placed on how these methods can be applied in the manufacturing systems area. Topics include development of research proposals, use of statistics in the analysis and communication of the results. Prerequisite: enrollment in manufacturing systems program or consent of instructor.

510-3 Quality Assurance. Study of recent advances in quality planning, quality measurement, design assurance, process control, participatory management, supplier quality, customer relations and improvement concepts. Prerequisite: Industrial Technology 470a and Industrial Technology 470b.

520-3 Computer-Aided Manufacturing II. Advanced study of the use of computers in the manufacture of products. Emphasis is placed on CAD/CAM integration, CAM generated data and current CAM languages. Prerequisite: Industrial Technology 445.

525-3 Six Sigma Black Belt II. The purpose of this course is to provide the student with knowledge of the most advance areas of the Six Sigma black belt training. Advanced fractional experiments, response surface methodology, robust design and process, design for Six Sigma and other advance six sigma principles and techniques are covered in this course. Prerequisite: Industrial Technology 470a, 470b, 480.

530-3 Lean Manufacturing II. This course will cover the principles and techniques of lean manufacturing. Major topics covered include value stream mapping, pull systems/Kabans, continuous improvement/Kaizen, lean sigma, lean simulation, and other modern lean manufacturing techniques and issues. Prerequisite: Industrial Technology 465.

535-3 Service Quality. This course examines how organizational leadership, strategic development and deployment of service management systems are used to achieve service quality. Ker service quality management concepts of costumer and market focus, employee focus, communication, and service delivery will be taught through the use of case studies, article reviews and team projects.

540-3 Reliability Analysis. The objective of this course is to provide the student with an overview of the basic techniques applied in the field of reliability and failure data analysis in a manufacturing environment. Prerequisite: 470b.

545-3 Electrical and Electronic Aspects of Robots. Analysis of servo motors, actuators, sensors and noise and feedback technique that drive robot manipulators. Prerequisite: Industrial Technology 455.

550-3 Project Leadership. This course is designed to develop a graduate student's human relationship skills for leading project teams. Through the use of case studies and

practical applications, students will learn effective leadership, team development, motivational and organizational planning, and conflict resolution practices.

560-3 Automated Factory. Advanced study of the integration of robots, automated assemble, automated storage and retrieval systems, automated inspection and computer-controlled transfer systems. Economic justification and implementation are emphasized. Prerequisite: 520, Industrial Technology 455.

580-1 to 4 Seminar. Collective and individual study of issues and problems related to manufacturing systems. Graded *S/U*. Prerequisite: enrollment in the M.S. degree in manufacturing systems.

592-1 to 4 Special Investigations in Manufacturing Systems. Advanced topics in manufacturing systems. Topics are selected by mutual agreement of the student and the instructor. Prerequisite: consent of adviser.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MARKETING

(See Business Administration)

MASS COMMUNICATION AND MEDIA ARTS

mcmagrad@siu.edu

COLLEGE OF MASS COMMUNICATION AND MEDIA ARTS

The graduate faculty, consisting of members of the School of Journalism and the departments of Cinema and Photography, and Radio-Television, offers graduate work leading to the following degrees: Master of Arts in Media Theory and Research, Master of Science in Professional Media and Media Management, Master of Fine Arts, and the Doctor of Philosophy all in Mass Communication and Media Arts.

Graduate Faculty in Cinema and Photography (CP):

Aguayo, Angela, Assistant Professor, Ph.D., University of Texas, Austin, 2005; 2008. Documentary theory and social change, critical/cultural studies, video production.

Boruszkowski, Lilly A., Associate Professor, M.F.A., Northwestern University, 1979; 1982. Cinema production, digital post-production sound, editing, documentary and experimental film.

Bursell, Cade, Associate Professor, M.F.A., San Francisco State University, 2002; 2003. Cinema Production.

Cocking, Loren D., Assistant Professor, *Emeritus*, M.A., Ohio State University, 1969; 1976.

Felleman, Susan, Associate Professor, Ph.D., City University of New York, 1993; 1998. History and theory of film in relation to art, classical and contemporary Hollywood cinema, European "art" film, surrealism, psychoanalytic and feminist theory.

Gilmore, David A., Associate Professor *Emeritus*, M.F.A., Ohio University, 1969; 1969.

Kapur, Jyotsna, Associate Professor, Ph.D., Northwestern University, 1998; 1998. Feminist and Marxist analysis of media, globalization, children's film and consumer culture, documentary and ethnographic film, the German and Japanese new wave and Indian cinema.

Kolb, Gary P., Professor and *Dean*, M.F.A., Ohio University, 1977; 1979. Photography and digital arts.

Logan, Fern, Associate Professor, M.F.A., School of the Art Institute of Chicago, 1993; 1995. Photography, digital applications, alternative processes.

Martinez, Antonio, Assistant Professor, M.F.A., East Carolina University, 2005; 2006. Digital imaging, alternative

printing processes, multimedia installation, class and racial identity.

Overturf, Daniel, Associate Professor, M.F.A., Southern Illinois University Carbondale, 1983; 1991. Photography.

Paine, Frank, Associate Professor, *Emeritus*, B.S., Iowa State University, 1950; 1960.

Roddy, Jan Peterson, Associate Professor and *Director of Graduate Studies*, M.F.A., University of Illinois, 1987; 1988. Photo/digital production, media arts, image and word, art and politics, art and spirituality, documentary, race, class, gender and sexuality issues in media, rural U.S. & Ozark culture.

Rowley, R. William, Associate Professor, M.F.A., University of Iowa, 1974; 2000. Foundational digital and analog film production and post-production techniques, experimental filmmaking, observational documentary, intermedial arts.

Spahr, Robert, Assistant Professor, M.F.A., Parsons School of Design, New York city, 1991; 2009. Computational art, generative & procedural art processes, genetic algorithms, time-based media and live art.

Swedlund, Charles A., Professor, *Emeritus*, M.S., Illinois Institute of Technology, 1961; 1971.

Tudor, Deborah, Associate Professor and *Associate Dean*, and *Director of NMC* Ph.D., Northwestern University, 1992; 2006. British Cinema, Australian Cinema, War and Cinema, Digital Cinema, Sports, Documentary.

Vratil, Dru E., Associate Professor, M.F.A., University of Iowa, 1998; 2001. Screenwriting.

Graduate Faculty in Journalism (JRNL):

Atwood, L. Erwin, Professor, *Emeritus*, Ph.D., University of Iowa, 1965; 1967.

Babcock, William A., Professor, Ph.D., Southern Illinois University Carbondale, 1979; 2008. Media ethics, public policy reporting.

Brown, George C., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1963; 1956.

Freivogel, William H., Professor and *Director*, J.D., Washington University Law School, 2001; 2006. Journalism, media law, public affairs and policy.

Frith, Katherine Toland, Professor, Ph.D., University of Massachusetts, 1985; 2008. International advertising, copywriting, advertising and society.

Hlavach, Laura, Assistant Professor, J.D., University of Texas, 1985; 2004. Libel, open meetings/open records acts, copyrights, 21st century news writing and reporting, pedagogical constructivism.

Jaehnig, Walter B., Associate Professor, *Emeritus*, Ph.D., University of Essex, England, 1974; 1987.

Karan, Kavita, Associate Professor, Ph.D., University of London, 1994.

Lowry, Dennis T., Professor, Ph.D., University of Iowa, 1972; 1990. Social issues in advertising, communication research methods, content analysis.

McCoy, Ralph E., Professor, *Emeritus*, Ph.D., University of Illinois, 1956; 1955.

Onyebadi, Uche, Assistant Professor, Ph.D., University of Missouri, 2008; 2008. Political communication, news editorial.

Ramaprasad, Jyotika, Associate Professor, *Emeritus* Ph.D., Southern Illinois University Carbondale, 1984; 1986.

Shidler, Jon A., Associate Professor, *Emeritus*, M.S., Roosevelt University, 1980; 1990.

Spellman, Robert, Associate Professor, *Emeritus*, J.D., Cleveland State University, 1977; 1985.

Stone, Gerald C., Professor, *Emeritus*, Ph.D., Syracuse University, 1975; 1991.

Xie, Wenjing, Assistant Professor, Ph.D., University of Maryland, 2009.

Graduate Faculty in Radio-Television (RT):

Brooten, Lisa B., Associate Professor and Interim Chair, Ph.D. Ohio University, 2002; 2002. Media and globalization, gender, alternative media, social movements, political communication, interpretive/critical research methods, ethnography.

Burns, David, Assistant Professor, M.F.A., Parsons School of Design, 2001; 2005. 3D computer animation; media arts theory; technology, culture, and society; memory and post-memory.

2D & 3D digital imaging and animation.

Downing, John, Professor, *Emeritus*, Ph.D., London School of Economics, 1974; 2004.

Dybvig, Homer E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1961.

Gher, Leo A., Associate Professor, *Emeritus*, M.S., Southern Illinois University Carbondale, 1980; 1983.

Hochheimer, John, Professor, Ph.D., Stanford University, 1986; 2006. Community radio, global media, media studies pedagogy, media history, spirituality and education, and popular music.

Johnson, Phylis W., Associate Professor, Ph.D. Southern Illinois University Carbondale, 2003; 1990. Sound and radio culture, virtual worlds, gender and diversity, media literacy, acoustic ecology, instructional design and technology.

Keller, Kenneth R., Associate Professor, *Emeritus*, M.A., University of Illinois, 1966; 1984.

Kreider, Wago, Assistant Professor, M.F.A., Rutgers University, 2002; 2006. Independent filmmaking, broadcast television production; media studies.

Lawrence, William Novotny, Assistant Professor, Ph.D. University of Kansas, 2004; 2005. African American representation

in film and television, Japanese animation, Hindi cinema, film history, genre theory.

Lewison, Sarah, Assistant Professor, M.F.A., University of California, San Diego, 2001; 2007. Video, media studies.

Meehan, Eileen R., Professor, Ph.D., University of Illinois, Champaign-Urbana, 1983; 2007. Political economy of the media. cultural studies, mass communications history, critical communications research.

Motyl, Howard D., Assistant Professor, M.F.A., Northwestern University, 1990; 2007. Film and video production, the documentary.

Needham, Jay, Associate Professor, MFA, California Institute of the Arts, 1989; 2003. Video, film, digital audio production, and electro-acoustic music.

Padovani, Cinzia, Assistant Professor, Ph.D. University of Colorado, 1999; 2005. Historical approaches to political economy, public service broad-casting, international communication, social movements and the media.

Podber, Jacob J., Associate Professor, Ph.D., Ohio University, 2001; 2002. Media studies, oral history, cultural studies, Appalachian studies, media history.

Shipley, Charles W., Professor, *Emeritus*, Ph.D., Florida State University, 1971; 1971.

Thompson, Jan, Associate Professor, M.G.S., Roosevelt University, 1988; 2000. Video production, documentary, sports production.

Torre, Paul, Assistant Professor, Ph.D., University of South Carolina, 2005; 2006. Media Industries, including entertainment industry structures, technologies, and management; emerging media business models; global media distribution; media regulation and policy.

To support the graduate programs, the College of Mass Communication and Media Arts houses high-end multimedia computer labs and state-of-the-art design, video, audio, animation, and editing software. The college has a wide variety of cinema, photography, print media, radio-television and video production facilities. Students have access to the mainframe computer and the Internet.

For all MCMA graduate programs, applicants must hold a bachelor's degree from an accredited institution or have

completed all undergraduate degree requirements prior to the beginning of the classes for the term for which admission is sought. Applicants may begin the admissions process when they need no more than 32 semester hours beyond the credit shown on their transcript at the time of application to complete all requirements for the bachelor's degree.

Applications. All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met.

Applicants must submit completed application forms, transcripts of all undergraduate work, and a personal statement describing their objectives for study in the program to which they are applying, career goals and interests.

Applicants must arrange for three references to send letters of recommendation to the Director of Graduate Studies.

Students should contact the Director of Graduate Studies, College of Mass Communication and Media Arts, mail code 6606, Southern Illinois University Carbondale, Carbondale, IL 62901 to apply or to make other inquiries. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Mass Communication and Media Arts (MA, MS, MFA, Ph.D.). Applicants may pay this fee by credit card, personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Retention. In addition to the retention policies of the SIUC Graduate School, each master's degree student must maintain an overall grade point average of 3.0 (A = 4) and each Ph.D. student must maintain an overall grade point average of 3.25 (A = 4). Upon falling below this average, students will be allowed only one academic term (other than summer) to bring their average up to the minimum; failing this, they will be dropped from the program and will not be allowed to re-apply.

All MCMA graduate students will undergo an end-of-the-year faculty review of their progress toward their degree that includes course progress and/or creative or scholarly work. After the review, students will be notified of any deficiencies to be resolved, students failing to rectify those deficiencies by the end of the next semester (excluding summer) will be permanently suspended from the MCMA graduate program.

All MCMA graduate students who have completed their course work and the minimum number of credits required for projects, thesis or dissertation must enroll in MCMA 601, Continuing Research, each semester until the completion of their degree programs. Exceptions to the continuing enrollment rule are allowed only for students who are required to be away from SIUC full-time by the United States or the State of Illinois government.

Master of Arts Degree

Media Theory and Research.

This degree offers a broad overview of mass communication and media arts and their processes and effects in the larger social system. Graduates gain both an appreciation of the field's strengths and an understanding of its obstacles in being a force for social development. Areas in which this specialty is used include department-level leadership in the mass media industries, opinion research, commentary,

critical theory, content analysis, and teaching. The degree may lead to doctoral studies.

Admission. Students whose preparation is lacking in certain areas may be required to take undergraduate courses that will not be counted towards the M.A. degree.

International Students must have a TOEFL of at least 600 (paper score) or 250 (computer score). All applicants must take the Graduate Record Examination (GRE). Generally applicants must have a grade point average of at least 3.0 (A=4) for their last two years of undergraduate work. Other factors will also be considered including professional and academic accomplishments, examples of professional work, awards and honors, graduate examination scores or evidence of scholarship such as research papers.

Retention. No course in which the grade is below "C" shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. No more than 3 hours of "C" work in graduate courses will count toward the degree. The College of Mass Communication and Media Arts allows a maximum of three years from date of enrolling in the master's degree to completion of degree.

Curriculum. Candidates must complete a minimum of 32 credits including a minimum of 17 credits of core requirements, 12 credits in an emphasis area, and a 3-credit thesis.

Core

MCMA 500-3	Mass Media as Social Institutions
MCMA 504-3	Foundations of Mass Communication Theory
MCMA 506-3	Law and Policy of Mass Communication
MCMA 532-3	Quantitative Research Methods in Mass Communication
MCMA 592-2	Proseminar

Research Tools Courses (one of the following):

EPSY 506-4	Inferential Statistics
MCMA 530-3	Historical Research in the Mass Media
MCMA 533-3	Research Methodology in Mass Communication II
MCMA 534-3	Qualitative Research Methods in Mass Communication
MCMA 536-3	Content Analysis
MCMA 539-3	Legal and Governmental Research in the Mass Media

Emphasis Area

A minimum of four courses (12 credits) selected in consultation with the faculty adviser to include at least 2 courses from outside of the college and 1 course from within. Possible emphasis areas include, but are not limited to, advertising/persuasion, film and criticism, interactive multimedia, international communication, law and policy, media economics, media effects, media history, political communica-

tion, public relations, social issues, and telecommunications.

Thesis

MCMA 599-3 M.A. Thesis

M.A./M.B.A. Concurrent Degree Program

Separately the M.B.A. degree requires completion of 33 semester hours of course work; the M.A. in mass communication and media arts requires 32 semester hours of course work. In the concurrent M.A./M.B.A. degree program, the College of Business and Administration accepts 6 semester hours of MCMA-approved course work, and MCMA accepts 6 hours of COBA-approved course work. The end result is that the concurrent degree program entails completion of 27 semester hours of COBA-approved courses and 26 semester hours of MCMA-approved courses, for a total of 53 hours. This is a saving of 12 semester hours over pursuing both degrees separately outside of the M.A. in mass communication and media arts/M.B.A. concurrent degree program.

Master of Science Degree

The M.S. in Professional Media and Media Management Studies provides students with a practical background in applied research and critique of the communications industries and trains students with varied professional interests to establish careers in communications industries. More specifically, this program aims to train intelligent, self-aware, flexible graduates who will go on to become leaders in the communications industries. The core curriculum is designed to expose students to a broad foundation in media studies. In consultation with their faculty advisor, students also select an emphasis area in which in-depth exploration of one facet of professional media management, studies, practice or technology is explored. Students finish their program of study with a Research Report, which may be accompanied by a project, on a topic of their choosing from within their emphasis area. The College of Mass Communication and Media Arts allows a maximum of three years from date of enrolling for the M.S. program for completion of the M.S. degree.

Program Admission. All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit the Application for Admission to Graduate Study forms, certified transcripts of all post-secondary studies, results of the Graduate Record Exam, as well as three letters of recommendation from individuals who can evaluate potential for graduate studies. Applicants must also submit a resume outlining educational and professional experience, as well as a personal statement describing their objectives for study in the program, career goals and interests. Applicants should include an example of work that demonstrates their competency, preferably professional work, although prior academic work is acceptable. Work samples might be in the form of print articles, video or audio tapes, DVDs, URLs or CDs. Appli-

cants must clearly indicate their role(s) in any project submitted. Generally, applicants must have a grade point average of at least 3.0 (4.0=A) for their last two years of undergraduate work. International students whose native or first language is not English, or those with fewer than 100 graded semester hours of college credit at a U.S. college or university, must take the TOEFL and score at least 600 (paper score), or 250 (computer score) to be admitted. Students whose preparation is deemed lacking in certain areas may be required to take undergraduate courses to attain competency. These will not be counted toward the M.S. degree

Curriculum. Candidates must complete a minimum of 30 credits including 6 hours of core requirements, 21 credits in an emphasis area and a 3-credit Research Report.

Core (6 Credits)

MCMA 500-3 Mass Media as Social Institutions
MCMA 592-3 Master's Seminar

Emphasis Area (21 Credits)

A minimum of four courses selected in consultation with the faculty adviser. No more than 6 credits can be at the 400 level. Topics of study include media management, strategic advertising communication, digital documentary production, public policy reporting, and new media production.

Research Report (4 credits)

MCMA 589-3 Research Report

Master of Fine Arts Degree

The Master of Fine Arts degree provides substantial advanced study for a small number of highly talented individuals. The program emphasizes the artistic development of the individual student and the creation of quality artistic works in photography, film, video, sound, new media, and interdisciplinary media. Degree requirements are 60 semester hours, including 51 hours at the 500-level. The program generally takes three years to complete.

While mastery of craft within Media Arts is a vital component of the MFA, the philosophy is that graduate study should expand the student's breadth as an artist and encourage interdisciplinary study. Available course work in production, criticism, theory, history, and combined media studies emphasizes the interwoven character of traditional and contemporary approaches and technologies in the 21st century.

Additional course work can be pursued through the School of Art and Design, the School of Music, and the Departments of Theater, English, Anthropology, Speech Communication, etc. A distinguished faculty of artists and scholars, excellent facilities, and a variety of curricular offerings allow students to individually tailor their programs of study.

Admission. All requirements for admission to the Graduate School at Southern Illinois University Carbondale must be met. Applicants must submit the Application for Admission

to Graduate Study forms, certified transcripts of all post-secondary studies as well as three letters of recommendation from individuals who can evaluate their potential for graduate studies. Applicants must also submit a resume outlining educational and professional experience, as well as a personal statement describing their objectives for study in the program, career goals and interests.

Prospective students must present evidence of exceptional talent and/or potential in one or two media pursuits in the degree program. Applicants should include an example of work that demonstrates their competency. This evidence will ordinarily consist of a portfolio of photographs or digitally generated art works, one or more films, videos, sound works, multimedia productions, web art projects, or other evidence of artistic potential. Applicants must clearly indicate their role(s) in any project submitted. An interview with faculty in the program is highly recommended, particularly for applicants with minimal course work in the field.

Acceptance into the program and continuing enrollment are at the discretion of the College of Mass Communication and Media Arts and the Graduate School. Generally, applicants must have a grade point average of at least 3.0 (4.0=A) for their last two years of undergraduate work. International students whose native or first language is not English, or those with fewer than 100 graded semester hours of college credit at a U.S. college or university, must take the TOEFL and score at least 600 (paper score), or 250 (computer score) to be admitted. Students interested in applying for a Graduate Fellowship must take the GRE. Students whose preparation is deemed lacking in certain areas may be required to take undergraduate courses to attain competency. These will not be counted toward the MFA degree.

Retention. At the end of the first year in residence, each MFA student will undergo a review by a committee of faculty. Possible outcomes of this review are Pass, Conditional Pass, and Fail. Failure of this review will result in termination from the program. Students who receive a Conditional Pass in this review will be reviewed again during their next semester. The possible outcomes of this second review are Pass and Fail. Failure of this second review will result in termination from the program.

Procedures. By the end of the third week of the third semester in residence, each M.F.A. student will be required to select, in consultation with the Director of Graduate Studies, a committee chair and a committee of two additional graduate faculty members. The faculty committee and the student develop a specific plan of study, considering the requirements of the Graduate School, the degree program, and the goals of the student. This plan must be on file with the Director of Graduate Studies by the end of the third semester in residence.

The MFA degree culminates in an intensive Thesis called the Final Creative Project that must be publicly presented. The exact nature of the project and presentation will be determined in consultation between the student and

the committee. The committee chair supervises the Final Creative Project. An oral examination by the faculty committee will take place in conjunction with the public presentation of the Final Creative Project and will focus on an evaluation of the project. A formal research paper describing the project, its historical precedents, contemporary context, and theoretical underpinnings must be filed with the SIUC Graduate School. The University reserves the right to retain a portfolio or samples of each student's work.

Curriculum. The minimum 60 credit degree requires 36 credits of common requirements constituting a core, 18 credits of electives, and a 6 credit Final Creative Project.

Core (36 credits)

MCMA 557-6	MFA Studio Arts Practice(3,3)
MCMA 558-15	MFA Studio Critique (3, 3, 3, 3, 3)
MCMA 592-2	Proseminar
MCMA 550-4	History of Media Arts and Culture
MCMA 551-3	Theory of Media Arts
MCMA 531-3	Critical Research Methods in Media Arts and Culture
MCMA 599-6	Thesis (3,3 OR 6)

And

MCMA 552-3	Seminar: Topics in the History and Theory of Media Arts
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Or

MCMA 555-3 Topical Seminars

Electives (18 credits)

Select 18 credits from either inside or outside of the college. No more than 9 credits can be taken at the 400-level and no more than 6 hours of MFA Projects (3,3) can be taken. MFA Projects cannot be repeated with the same professor.

Doctor of Philosophy Degree

The Ph.D. degree program engages students in an interdisciplinary study of global media communication. Concepts and methods drawn from various research traditions in the field are compared and contrasted, while specialization in particular areas and approaches is open to students.

Admission. Students applying for doctoral study must have a master's degree and a graduate GPA of at least 3.25. International students must have a TOEFL score of at least 600 (paper score) or 250 (computer score). All applicants must submit currently valid Graduate Record Examination (GRE) scores. Other factors will also be considered including professional and academic accomplishments, examples of professional work, awards and honors, evidence of scholarship such as research papers and published articles, and prior full-time teaching in the mass communication and media arts area. A visit to SIUC and interview with faculty is recommended.

Students whose preparation is lacking in certain areas may be required to take undergraduate courses that will not be counted towards the Ph.D. degree.

An accelerated entry option to the Ph.D. program is offered in exceptional cases to students who have been admitted to the M.A. program. To be eligible, the student must: 1) possess a master's degree; 2) have qualified for admission to the MCMA Ph.D. program initially; 3) complete at least nine hours but no more than 18 hours in the M.A. degree; 4) have a minimum 3.25 GPA in the M.A. program with no incomplete or deferred grades. The student may petition the Director of Graduate Studies for the accelerated entry option during the semester in which the student will begin taking the 9th hour of graduate courses, but must petition before earning the 18th hour of course work in the M.A. program. If approved, the student is enrolled in the Ph.D. program the next semester. Up to 18 graduate credits earned in the M.A. program will count toward the Ph.D. degree if the accelerated entry option is approved by the MCMA Graduate Committee. Once the student is admitted to the Ph.D. program, all requirements of the Ph.D. program apply. Exceptions to any of these rules must be appealed to the MCMA Graduate Committee, which has final authority to approve or reject the petition.

Retention. No course in which the grade is below "C" shall count toward the degree nor fulfillment of any requirement, but the grade will be included in the grade point average. No more than 3 hours of "C" work in graduate courses will count toward the degree.

Procedures. Detailed policies for the Ph.D. degree are available from the MCMA Graduate Office, including such topics as transfer credit, composition of graduate committees, comprehensive exam procedures, etc. However, some of the major steps through the program are:

1. During the third semester of enrollment, each Ph.D. student will prepare a total program plan for the degree and secure sponsorship by a faculty member who may become the dissertation committee chair. The plan should include a list of courses and tools, with some explanation and justification for their selection in relation to academic goals. The plan will be discussed and modified, when appropriate, before approval.
2. When the student has completed all course work (with all incomplete and deferred grades removed) other than the classes taken in the concurrent semester, the student must pass rigorous comprehensive written and oral examinations. The examination must be completed during the fall semester of the third year in the program. Failure to successfully complete the exams by the end of the fall semester of the third year will result in dismissal from the program.
3. Upon successfully completing the comprehensive written and oral exams, the student advances to

candidacy to complete and defend a dissertation based on scholarly research and independent thought that adds to the body of knowledge in the field.

4. Under the guidance of a dissertation committee chair, the student forms a dissertation committee and prepares a dissertation proposal consisting of the introduction, literature review, and methodology for the investigation proposed. An oral defense of proposal must be made before the committee and interested observers, and approved within one year of reaching candidacy.
5. The dissertation defense will be before members of the dissertation committee and interested observers. Although others than committee members may be allowed to ask questions, the pass or fail decision on the oral defense will be made by committee members only. The College of Mass Communication and Media Arts allows a maximum of seven years from date of enrolling for completion of the doctoral degree.

Curriculum. The Ph.D. in mass communication and media arts requires a minimum of 60 credits including 13 credits of foundation courses, 6-9 credits of research tools courses, 12-15 credits of electives, and a 24-credit dissertation. A minimum of 12 courses are required. 5 foundation courses constitute the required core. 7 additional courses, including methods. 10 courses must be taken within MCMA.

All course work counting towards the degree must be at the 500 level. If the faculty advisor and students determine a 400 level course would be beneficial, the course can be taken as an independent study with specific extra work to make it equivalent to a 500 level course. A plan of study must be submitted and approved for such a course.

A maximum of two (2) independent study courses, for 6 credit hours total, can be counted toward degree (MCMA 596 and/or 591).

Foundation

MCMA 504-3	Foundations of Mass Communication Theory
MCMA 505-3	Theoretical Issues in Mass Communication
MCMA 508-3	Conceptual Foundations of Research Strategy
MCMA 595-2,2	PhD Proseminar

Research Tools Courses

Six to nine credit hours of additional research methods courses must be taken, selected in consultation with the student's faculty advisor. A minimum of 2 must be within MCMA.

Electives

Twelve to fifteen credit hours of additional courses must be taken, selected in consultation with the student's faculty advisor to build an emphasis.

Possible emphasis areas include but are not limited to Journalism/Mass Communication, Media Law & Policy, Media/Cultural Studies, Interdisciplinary.

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Courses (CP)

Graduate work in the Department of Cinema and Photography is offered toward the Master of Fine Arts degree.

Four hundred-level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

Students provide photographic materials for all cinema and photography production courses, students supply their own film, photographic paper, certain specialized chemicals, a fully adjustable 35mm or 120 roll film camera and \$15 additional cost for laboratory materials for each production course. In motion picture production courses, students provide their own film, processing, recording materials and editing supplies. In courses, which involve analysis and screening of a number of films, a cost of \$10 per course for screenings will be required.

401-3 Large Format Photography. Introduction to the aesthetics and techniques of large format (sheet film cameras) photography with emphasis on personal expression and commercial/professional applications. Students purchase texts and provide photographic materials and chemicals. Laboratory fee: \$35. Prerequisite: 322 or concurrent enrollment and consent of department.

402-6 (3,3) Sensitometry. An advanced course taught in two semesters covering the technical and visual applications of the black and white process. The initial semester deals primarily with controls over the photographic negative, the zone system, density parameters and practical chemistry. The second semester encompasses all the factors related to the production of the silver print. Topics covered are materials, chemistry, equipment and the aesthetics of photographic printing. The two semesters are sequential and must be taken in order. Laboratory fee for each section \$35. Prerequisite: 322 or concurrent enrollment and consent of department.

404-3 Introduction to the Studio. Problems and possibilities in the aesthetics and techniques of studio photography: lighting, visual perception, environment, history, and theory. Students purchase texts and provide photographic materials. Laboratory fee \$35. Prerequisite: 322 or concurrent enrollment and consent of department.

410-3 to 9 (3,3,3) Topics in the History of Photography. Focused study on special topics in the history of photography. Sample topics: The Mythic American Image, The History of Color Photography, African American Photographers, The Appropriated Image, The History of the Image

Comprehensive and Oral ExamsDissertation

MCMA 600-24 Dissertation (24 credits): Proposal and Defense.

in Social Documentary. Screening fee: \$30. Prerequisite: CP 310. May be repeated as topics vary..

415-3 Photographic Criticism and Practice. Introduction to photographic, criticism and its application in photographic practice. Through readings, writings and practical experiences, students will gain a broad-based knowledge of critical approaches to the photographic image. Screening fee: \$30. Prerequisite: 310 with a grade of B or better and 320 with a grade of C or better.

421-6 (3,3) Experimental Photographic Techniques. Experimental approaches to the creation of photographic images. Specific course content may include experimental techniques utilizing the camera, the darkroom and a wide range of additional media. Students provide materials and may purchase texts. Laboratory fee \$35. Prerequisite: 320, 322 and consent of department.

426-3 Non-Silver Photography. Intensive introduction to hand-applied emulsions of cyanotype, Vandyke brownprinting, gum printing, etc. Students purchase materials and may purchase texts. Laboratory fee: \$35. Prerequisite: 322 and consent of department.

427-3 Advanced Color Photography. Advanced study and production of color photographs. Students provide materials and may purchase texts. Laboratory fee: \$35. Prerequisite: 322 and consent of department.

429-3 Digital Imaging. Introduction to Macintosh operating system, image editing, input and output through lecture, hands-on in-class sessions and outside assignments. Focuses on the creative application of digital skills. Through critiques of student work and discussion, students explore the creative and aesthetic challenges and possibilities inherent in the digital medium. Students provide material, disks and text. Lab fee: \$35 Prerequisite: CP 322 or consent of instructor.

431-3 Applied Photography I. An introduction to the theory, practice and professional responsibilities of contemporary commercial photography. Students produce a portfolio that surveys commercial applications. Areas of study include advertising, editorial and industrial components. Students provide materials and may purchase additional equipment. Laboratory fee: \$35. Prerequisite: 322 and consent of the department.

432-3 Applied Photography II. An advanced investigation into the principles outlined in 431. Students pursue a specific portfolio application throughout the course. Students provide materials and may purchase additional equipment.

Laboratory fee: \$35. Prerequisite: 431 and consent of department.

436-3 Documentary Photography: Method, Format and Distribution. Exploration of the techniques, history and contemporary context of documentary photography. Audience, publication, and distribution of documentary projects will be addressed. Each student will produce an in-depth documentary photographic project. Students purchase texts and provide photographic materials. Laboratory fee: \$35. Prerequisite: 322 and consent of department.

449-3 to 6 (3,3) Survey of Film History. Intensive study of particular periods of cinema history, including technological developments, national and international movements, aesthetic traditions, economic and political determinations and concerns of film historiography. May be taken twice, if topic differs. Students purchase texts. Screening fee: \$30. Prerequisite: CP 360 with C or better.

452-3 Screenwriting. A study of screenplay structure for feature-length, classically-structured scripts. Includes treatments, scene-by-scene outlines, character development, and script formatting. Students are required to create original script material. Screening fee: \$30. Prerequisite: 360, 352 and junior standing.

454-3 Animated Film Production. Practical course for visual expression exploring various 2-D animation techniques such as developmental, filmographic, rear lit, cut out, line, cel, etc.,. Students purchase texts, art supplies, film materials and processing. Equipment use fee: \$30. Prerequisite: 355 with a grade of B or better, 360, an overall gap of 2.75 or higher, or consent of department.

461-3 International Documentary Film 1875-1950. The study of significant developments in international documentary film from 1875 to 1950. A discussion of documentary as a distinct art form with its own history and set of theoretical concerns around politics, poetics, and ethnographic filmmaking. Students purchase texts. Screening fee: \$30. Prerequisite: junior standing, 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

462-3 International Documentary Film 1950-Present. An examination of styles in documentary film based upon historical precedent, technological changes, responses to theoretical and ethical questions, and the influences of theatrical distribution and television. Students purchase texts. Screening fee: \$30. Prerequisite: 461, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

463-3 History of the Experimental Film. Study of experimentation in cinema from the turn of the 20th century to contemporary avant-garde films. Student purchase texts. Screening fee: \$30. Prerequisite: junior standing, 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

466-3 to 6 (3,3) Film Styles and Genres. Intensive study of a specific body of films grouped by similarities in style, genre, period or cultural origin. Emphasis is on historical,

theoretical and critical issues. Topics vary. Sample topics: Science Fiction Film; Film Noir; French New Wave; Third World Cinema; Surrealism in Film. May be taken twice, if topic differs. Students purchase texts. Screening fee: \$30. Prerequisite: junior standing 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

467-3 to 6 (3,3) Film Authors. Intensive study of the work of one or more film authors (directors, screenwriters, etc.). Emphasis is on historical, theoretical and critical issues. Topics vary. Sample topics: the films of Alfred Hitchcock, the films of Jean Renoir; the films of Andrei Tarkovsky. May be taken twice, if the topic differs. Students purchase texts. Screening fee: \$30. Prerequisite: junior standing, 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

469-3 Queer Visual Culture (Same as WMST 440). Course discusses aspects of the aesthetics, history, theory, and politics of media representations of gender and sexuality. Cultural texts from one or a combination of media forms, genres, historical periods, and platforms, will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated, if topics vary.

470A-3 to 12 (3,3,3,3) Advanced Topics Cinema Studies. An advanced topics course in cinema studies: history, theory, and criticism. Sample topics: visualizing the body, feminist film theory, surveillance and the cinema. May be repeated, if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the first 41 credits of the Cinema Specialization in the undergraduate Cinema and Photography major. No more than six credit hours of 470 Advanced Topics courses counted for graduate credit. Screening fee: \$30. Prerequisite: junior standing, 368, or gpa in cinema and photography courses of 2.75 or higher, or consent of department.

470B-3 to 12 (3,3,3,3) Advanced Topics Film Production. An advanced topics course in film production. Sample topics: location lighting, production management, and film sound workshop. May be repeated, if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the first 41 credits of the Cinema Specialization in the undergraduate Cinema and Photography major. No more than six credit hours of 470 Advanced Topics courses counted for graduate credit. Equipment usage fee: \$60. Prerequisite: junior standing, 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

470C-3 to 12 (3,3,3,3) Advanced Topics Photography. An advanced topics course in photography. Sample topics: still life, narrative tableau, and digital presentation. May be repeated, if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the first 33 credits of the Photography Specialization in the undergraduate Cinema and Photography ma-

for. No more than six credit hours of 470 Advanced Topics courses counted for graduate credit. Laboratory fee: \$35. Prerequisite: junior standing, 322 or concurrent enrollment.

470D-3 to 12 (3,3,3,3) Advanced Topics Interdisciplinary Studies. An advanced topics course in interdisciplinary studies between cinema and photography. Sample topics: visual perception, ethics of image making, 3-D filmmaking, and filmograph production. May be repeated, if topics differ. No more than twelve (12) credit hours combined with 470 Advanced Topics courses counted in the 41 credits of the Cinema Specialization or the 33 credits of the Photography Specialization in the undergraduate Cinema and Photography major. No more than six credit hours of 470 Advanced Topics courses counted for graduate credit. Prerequisite: junior standing, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

470W-3 to 6 (3,3) Advanced Topics Screenwriting. An advanced topics course in screenwriting. Sample topics: adaptation, comedy, and autobiography. May be repeated, if topics differ. No more than twelve (12) credit hours combined from 470 Advanced Topics courses counted in the first 41 credits of the Cinema Specialization in the undergraduate cinema and photography major. No more than six credit hours of 470 advanced topics courses counted for graduate credit. Screening fee: \$30. Prerequisite: junior standing, 452, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

472-3 to 6 (3,3) Problems in Creative Production: Cinema. Intensive examination and problem solving, through readings, screenings, and filmmaking, of a cinematic genre, style, or technical challenge. Theory is combined with practice. Individual and group projects. Sample problems: cinematography, digital filmmaking, 35mm filmmaking, film as performance, optical printing. May be repeated once if topic differs. Equipment usage fee: \$60. Prerequisite: junior standing, 368, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

484-3 Optical Printing. A creative, frame-by-frame study and practice of 16mm filmmaking. Advanced filmmaking by the individual using a 16mm optical printer to complete a number of projects during the semester. Optical printing techniques incorporated into projects include: fades, dissolves, freeze frames, step printing, multi-frame presenta-

tions, frame magnification, Super 8 enlargement to 16mm, matt construction, and others. Students will process their 16mm and Super 8 film. Optical printer, film processors, cameras and processing chemistry provided by the department. Equipment use fee: \$60. Prerequisite: junior standing, cinema and photography 376, a gpa in Cinema and Photography course of 2.75 or higher, or consent of department.

496A-3 Film Production III. (Formerly Cinema and Photography 455) Advanced filmmaking, by individuals or groups, from pre-production through completion of filming, ready for post-production. Study and practice of script breakdown, budgeting, production planning, casting, location and studio techniques, equipment rental, lighting and double system synchronous sound filming. Students purchase film stock; sound recording materials, lab processing and workprint or telecine services, and other incidental materials. The department provides camera, sound, and lighting equipment. Equipment usage fee: \$60. Prerequisite: senior standing, 376, any two 400 courses numbered 489 or lower; a gpa in Cinema and Photography courses of 2.75 or higher, or consent of department.

496B-3 Film-Production IV. (Formerly Cinema and Photography 456) Advanced post-production, completion to first composite film print or on-line video master, for project begun in 496a. Study of aesthetics and practice of film editing, sound design, sound mixing and laboratory finishing procedures. Students purchase picture and sound editing materials and are responsible for laboratory costs. Department will retain a copy of this culminating work in the program, usually on video or DVD. The department provides editing facilities. Equipment use fee: \$60. Prerequisite: 496a, a gpa in cinema and photography courses of 2.75 or higher, or consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only

Courses (JRNL)

400-3 History of Journalism. Development of American newspapers, magazines, and radio-television with emphasis on cultural, technological and economic backgrounds of press development. Current press structures and policies will be placed in historical perspective.

402-3 Advanced Creative Strategies. Examination of and practice in the development of persuasive, strategic campaigns and message strategies for multiple clients. Creation of a professional quality portfolio demonstrating proficiency

in both traditional and new media required. Prerequisite: 302

403-3 Media Sales. Historical perspective of media and sales philosophies and tactics grounded in sales ethics. Learn and apply relationship selling techniques enabling students to become media advertising consultants. Learn how to effectively work with local clients agencies, and national firms and balance the goals of management with the needs of clients while enhancing communication effectiveness. Prerequisite: 302 and 304.

404-3 Advanced Media Strategies and Planning. Provides an understanding of the factors that influence media strategy. Emphasis will be placed on advanced concepts such as building reach patterns, calculating effective frequency levels, in order to develop an effective media plan. Introduces media planning for the web and other new media options. Prerequisite: 304.

406-3 Advertising/IMC Campaigns. (Formerly Journalism 476) Conceptual synthesis and practical application of business, research, media and creative principles used in the formulation of persuasive messages. Includes the development of a complete integrated marketing communications (IMC) campaign for the specific advertiser. Includes all relevant target audience contact points (e.g., advertising, sales promotion, marketing public relations, event marketing, packaging) and both written and oral presentation of the campaign. Prerequisite: 303, 304, 405.

407-3 Social Issues and Advertising/IMC. Analysis of social issues involving advertising and integrated marketing communications (IMC); economic relationships, government and self-regulation, cultural effects, influence on media content and structure, role in democratic processes, international comparisons, and the stereotyping of women minorities and other audience segments. Prerequisite: senior standing.

409-3 Specialized Topics in Advertising/IMC. New developments in advertising and integrated marketing communications. Topics change each term. Students should check specific topic and any special requirements and prerequisite before enrolling. Prerequisite: permission of instructor.

411-3 Public Policy Reporting. Continued development of reporting skills with emphasis on the reporting of public policy issues and on use of statistics, the analysis of computerized data bases, and advanced techniques for the investigation of complex stores. Prerequisite: 311 or consent of instructor.

412-3 Images and Sound. Photojournalism course advancing news gathering techniques, visual, and interactive journalistic communication, and photographic content and sound. Audio recording, editing, and flash photography skills will be developed and professional and ethical aspects of photojournalism will be emphasized. Laboratory fee: \$42. Prerequisite: 313 or consent of instructor.

413-3 Advanced Photojournalism. Emphasis in-depth photojournalistic reporting. Students research, write and photograph picture stories. Course examines the ethics, history and social role of photojournalism domestically and internationally. Students work with digital imaging and are introduced to full-motion video. Students must have fully adjustable camera. Laboratory fee: \$64. Prerequisite: 313 or Cinema and Photography 320. Student supplies own materials.

414-3 Picture Story and Photographic Essay. Production of photographic stories and essays for newspapers, magazines and news media presentations. Students dis-

cuss, research, photograph, design and write several stories and essays, while studying the work of influential photojournalists. Student must supply own camera equipment. Lab fee: \$42. Prerequisite: 313 or consent of instructor.

416-3 Critical and Persuasive Writing. The roles and responsibilities of the editor, editorial writer and opinion columnist with emphasis upon editorial writing and critical thinking. Editorial problems methods, policies, style and the fundamentals of persuasion and attitude change form the basis for study. Prerequisite: 311

417-3 Freelance Features Writing. Identification, research and application of creative writing techniques in producing feature articles for various media. Students analyze reader appeal as well as feature story structure and methods of marketing features to various audiences and publications. Laboratory fee: \$42. Prerequisite: 310.

419-(3,3,3) Specialized Topics in News Reporting. Develops detailed reporting expertise in such topics as business, environment, education, arts and entertainment, health and medicine, sports, public journalism, etc. Laboratory fee: \$42. Repeatable up to three times as long as the topic changes. Prerequisite: 311 or consent of instructor.

434-3 Media Ethics. (Same as PHIL 434). Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are introduced to encourage students to think critically about the same mass media and their roles in modern society.

435-3 Advanced Graphic Communication. Continues development of message design skills. Emphasizes creative solutions to the display of complex content in a wide variety of media. Laboratory fee \$46. Prerequisite: 335 or consent of instructor.

436-3 Multimedia Publication Design. Building upon the basic skills learned in publishing on the WWW, the course continues the exploration of using computer-based technologies for presentation of information to wide audience using the interactive capabilities of the internet and other new media. Focus is on organization of information, design of presentation, use of transaction generated information, and the production of multimedia files in a networked environment. Includes discussion of topics including privacy intellectual property, libel, and other matters of concerns to an interactive publisher. Course fee: \$42. Prerequisite: Mass Communication and Media Arts 396.

450-3 Account Planning and Consumer Research. Introduces the field of account planning. Provides an understanding of how consumer research influences and informs the creative process. Learn to use qualitative research methods that are used in consumer research; Writing creative briefs that are effective and provide insights for creative team. Prerequisite: 405.

494-1 to 6 Practicum. Study, observation and participation in publication or broadcast activities. Prerequisite: consent of instructor and department. Mandatory Pass/Fail.

495-1 to 12 (1 to 6, 1 to 6) Proseminar. Selected seminars investigating media problems or other subjects of topical importance to advanced journalism majors. Seminars will be offered as the need and the interest of students demand. Prerequisite: senior standing.

599-1 to 6 Thesis.

600-1 to 24 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only

***** Courses (MCMA)

449-3 Race and Media in United States History. (Same as Black American Studies 449 and History 449) This course explores the history of race in the modern United States by focusing on moments of racial crisis that garnered media attention. The course asks what these moments reveal about the shifting status of "race," as well as how spectacles have changed with the transformation of media.

497-1 to 6 Special Interdisciplinary Study. Designed to offer and test new and experimental courses and series of courses within the College of Mass Communication and Media Arts. Incorporation course fee: \$25.

500-31 to 12 (1 to 4, 1 to 4, 1 to 4) Topical Seminar Media as Social Institutions. Seminars on subjects of current interest, with the topics determined through student and faculty request and interest. Topics include audience analysis, communication and social systems, media economics, persuasive communications. Intensive examination of the structure, functions and performance of the mass media in modern societies. It introduces the major theoretical perspectives used in reviewing media activities and the relationships between media organizations and other institutions of society, and provides a review of recent literature on media operations and criticism of these operations. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

501-3 Intellectual Property and the Law. Examines intellectual property in legal, economic, and cultural terms. Topics of concern include copyright, patents, trademarks, entertainment law, and infringement. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

502-3 Media Economics. Introduction to political economy of the media. Addresses core concepts, theories, and methods used to understand media as cultural industries. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

503-3 Media & Technology. A survey of the major technological changes in mass media and their impacts society and the media industries. On completion of the course students should have a basic understanding of media technology in shaping communication patterns and their social outcomes. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

504-3 Foundations of Mass Communication Theory. The study of principal theoretical approaches to media

nered media attention. The course asks what these moments reveal about the shifting status of "race," as well as how spectacles have changed with the transformation of media.

analysis, addressing empiricist, cinema studies, media studies and cultural studies research paradigms. Historical and cultural contexts of media theory construction. Focus on original text. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

505-3 Advanced Theoretical Issues in Media Communication. Analysis and critique of advanced and recent theory, and research trends, in media studies, cultural studies, communication technology studies and mass communication research. Restricted to: MCMA 504; CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts

506-3 Law and Policy of Mass Communication. Focuses on free expression in journalism and entertainment across the media. Topics may include news gathering techniques, intellectual property, the Internet, and governmental regulation. The course pays special attention to the tension between what is legal and what is ethical. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

507-3 Media Management. Analysis of a variety of media industries, including industry structures, and the industry structures, and the industry processes of media development, production, and distribution. Attention to management of media companies across sectors as the industry adjusts to economic and technological change. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

508-3 Conceptual Foundations of Research Strategy. Analysis and evaluation of conceptual frameworks underlying empirical research strategies, positivist, textual and qualitative, commonly used in media and internet research. Issues in multi-method research strategies are reviewed. Ethical implications are debated. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

509-3 Media Ethics. Overview of ethics philosophies and accountability tools for the mass media. Areas to be studied include journalism reviews, ethics codes, ombudsmen, media arts, new councils, and public/civic journalism. Cov-

ering issues in journalism, photojournalism, public relations, advertising, new media, and “infotainment”. Restricted to: MCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

510-3 New Media Research Methods. Provides an overview of research methods as applied to new media communication. Basics of measurement, survey, experimental and quasi-experimental research designs will be stressed. Examines analytical, aesthetic, creative and theoretical activities as primary qualities of visual perception. Applies cognitive studies to visual thinking processes in the area of multimedia message design and evaluation. Students apply quantitative and qualitative methods to develop analytical skills through exercises.

512-3 Web Design. Introduces design principles and authoring tools for publishing on the World Wide Web. Evaluates alternative approaches to site architecture, navigation and layout. Includes more advanced applications, such as web-based multimedia and web-enabled databases. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

515-3 Corporate Multimedia. State of the industry and case studies in corporate multimedia uses. Students receive detailed information on typical design and production of corporate multimedia projects. Students also use state-of-the-art hardware and software to design, develop and produce a corporate multimedia project for actual clients. The emphasis is to give students design and hands-on experience in developing multimedia productions for corporate applications. Incorporating course fee: \$20. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

516-3 NET. ART. History, theory, and practice of digital media as an online art form. Examine and produce works in linear and non-linear hypermedia narrative, network conceptualism, and generative software. Issues include identity, location, collaboration, surveillance, hacktivism, tactical media, immersion, game design, media synthesis. Restricted to MCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

530-3 Historical Research in the Mass Media. Methods of data collection, analysis, organization and presentation for historical research in mass media. Use of such sources as newspapers, archives, personal papers, manuscripts and oral history. Use of statistical methods in mass media historical research.

531-3 Critical Research Methods in Media Arts. This course introduces students to critical and interpretive research methods and techniques for the study of media arts and culture. It focuses on interdisciplinary approaches and covers a range of methods and theoretical perspectives that may include historiography, ideological and textual analysis, semiotics, psychoanalysis, critical ethnography

and auto-ethnography, and/or other critical methods. Areas of emphasis may vary by instructor. This course may be repeated when the topic differs. Prerequisite: MCMA 551; CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

532-3 Quantitative Research Methods in Mass Communication. Identification of research problems, formulation of concepts and research hypotheses in journalism and mass communication, sampling procedures, design experimental and survey research. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

533-3 Research Methodology in Mass Communication II. Problems of measurement, design and analysis in journalism and mass communication research. Techniques of attitude scaling, questionnaire construction. Bivariate and multivariate data analysis. Procedures for the creation, management and analysis of large data sets using computer programs. Prerequisite: 532 and Educational Psychology 506.

534-3 Qualitative Research Methods. An introduction to the intellectual underpinnings, epistemology, and methodologies of qualitative research. The course focuses on critical and interpretive approaches to researching media industry structures, artifacts, audiences, and producers. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

536-3 Media Content Analysis. Overview of methods and problems of systematically analyzing mass media messages with critique of published studies. Experience in conducting a content analysis project on a topic of current scholarly significance in mass communication and media arts. Prerequisite: CMCMA major or consent of instructor or director of Graduate Studies in Mass Communication and Media Arts, and one graduate-level research methods course.

539-3 Legal and Governmental Research in the Mass Media. Research procedures used to find and analyze documents generated by executive, legislative, and judicial entities. Prerequisite: MCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

541-6 (3,3) Seminar: History of Photography. Advanced study of the history of photography within a variety of European and American visual cultural contexts. Particular attention given to photography's transformation of the nature of art, society and media culture. The seminar also explores historiographical issues by examining the analytical assumptions of a number of leading photo-historians. The seminar is structured around intensive weekly readings and discussions as well as development of research and analytical skills via written assignments. The first semester covers the period between 1839 and 1920 and the second semester covers 1920 to the present. The two semesters are sequential and should be taken in order. Screening fee:

\$20. Prerequisite: admission to the photography concentration in the College of Mass Communication and Media Arts MFA (Master of Fine Arts) program or consent of the instructor.

542-6 (3,3) Seminar: Photography Theory and Criticism. Advanced study of theoretical and critical approaches to the study of photography. Examination of how different assumptions produce different criteria for the analysis and aesthetic appreciation of the medium. Theoretical and critical models include Marxism, feminism, semiology, formalism and other. The seminar gives students the chance to practice photography theory and criticism themselves and to improve their abilities to interpret, evaluate, and theorize about photographs and photography in general via intensive readings and discussions, written assignments and class presentations. The course is a two-semester sequence and they should be taken in order. Screening fee: \$20. Prerequisite: admission to the photography concentration in the College of Mass Communication and Media Arts MFA program or consent of the instructor.

543-15 (1-3,1-3,1-3,1-3,1-3)Media Arts Studio Seminar. A forum for the pursuit of creative projects in the media arts. May be repeated as the topic changes. Laboratory fee: \$25. Prerequisite: CMCMA MFA or PMMM major or consent of instructor or director of graduate studies in Mass Communication and Media Arts..

544-3 Seminar in Film History: American. Analysis of the films and ideas associated with a particular director or a significant movement in motion picture history. Screening fee: \$20. Students purchase texts. Course content varies each semester; may be repeated for a total of six credits. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

545-3 Seminar in Film History: International. Analysis of the films and ideas associated with a particular director or a significant movement in motion picture history. Screening fee: \$20. Students purchase texts. Course content varies each semester; may be repeated for a total of six credits. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

546-6 (3,3) Seminar Film Theory. Advanced study of major currents in film theory and intensive consideration of particular topics in film theory. Discussion of early debates about aesthetics, perception and realism; linguistically modeled, structuralist, formalist and psychoanalytic theories; ideological, deconstructionist, feminism reception and other postmodern theoretical trends. Special topics might include: feminism and film, Freudian concepts for film, Marxism and film, film and language, formalist film theory, spectatorship, film and perception. Intensive weekly reading and discussion. Films are screened in relation to theoretical topics and assigned readings. Screening fee: \$20. Prerequisite: admission to the cinema concentration in the

College of Mass Communication and Media Arts MFA (Master of Fine Arts) program or consent of instructor.

548-1 to 16 (Master of Fine Arts) MFA Projects. Supervised independent creative work in media arts, the exact nature of which is to be determined in consultation with the MFA faculty member. Equipment usage fee: \$50. Restricted to: CMCMA MFA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

550-3 History of Media Arts and Culture. Introduces the history of the reproducible media arts, beginning with their prehistory in printmaking, and focusing on photography, cinema, radio, television, video, and other visual, audio, and digital media. Locates media technologies in the historical, material conditions of their emergence, consider how media interact with and make history, how media arts forms and movements arise historically and how these relate to mass media. Screening Fee: \$35. Prerequisite: CMCMA MFA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

551-4 Theory of the Media Arts. A survey of the major theoretical debates about the reproducible media arts with particular emphasis on the relationship between mass media, new media technologies, and art. Debates will be grounded in the study of aesthetic practices, technological innovations, political-economic settings, and overall historical context within which they emerged. Screening Fee: \$35. Prerequisite: MCMA 550; CMCMA MFA major or consent of instructor or director of graduate studies in Mass Communication and Media Studies.

552-3 Seminar: Topics History and Theory of Media Arts. This course provides an in-depth study and discussion of selected topics in the history and theory of the media arts. Topics vary and will be announced in advanced. This course may be repeated when the topic differs. Screening Fee: \$35. Prerequisite: CMCMA MFA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

555-3 to 15 (3,3,3,3,3) Topical Seminars. Seminars on subjects of current interest, with the topics determined through students and faculty request and interest. Prerequisite: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

557-6 (3,3) MFA (Master of Fine Arts) Studio Arts Practice. The first-year course for an incoming MFA student in the college serves as an introduction to media creation strategies and concepts. The emphasis is in aesthetic and conceptual development as encountered within a variety of media arts. The course is team taught by a number of faculty in modules dedicated to various media forms- still image, time-based, spatial, and interactive. Lab fees \$75. Prerequisite: MCMA MFA student or consent of instructor

558-15 (3,3,3,3,3) MFA (Master of Fine Arts) Studio Critique. This critique-based seminar course is offered each semester to all graduate students in the MFA program except those in their last semester of Final Creative Project

work. The goal for this course is to create an interdisciplinary forum where students develop research skills, learn how to best articulate their artistic production, and critique their peers' works. Lab fee \$75. Prerequisite: MCMA MFA student or consent of instructor.

560-3 Studies Mass Communication History. Examine specific topics in the histories of several types of media and related fields: newspapers, magazines, radio, television, advertising, public relations and film. This study will investigate the conceptual dimensions of communication history by examining social histories, economic histories, cultural histories and political histories of the field.

561-3 Communication for Social Change. Evolution of communication and social change theories and practices; contextual factors (including aid, trade and development policies); organizations influential in formulating and implementing policy; communication intervention strategies; evolving journalism practices. Prerequisites: MCMA 500, CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

562-3 Significant Studies in Mass Communication Research. A review of a broad selection of early literature in communication research that has provided much of the conceptual basis for empirical studies during the past two decades.

563-3 Globalization and the Media. Debates about globalization from historical, theoretical, and critical perspectives. The major uses of communication technologies in international economic, political, and cultural processes. Topics include regional and global trends, trade regimes, global policy bodies and policy issues; global media influence. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

564-3 Political Economy of Media. Addresses the intersections of politics, economics, and social structures that underpin media arts and industries at global and national levels. Emphasizes the relationship between theories and methods. Prerequisites: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

565-3 Strategic Advertising Communication. Problem solving through strategic advertising communications and functional marketing communication, including branding, advertising, PR, sales promotion and direct response in an integrated program. The focus is on strategy and planning, and students will concentrate on integrating targets, timing and message strategy. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

589-1 to 4 M.S. Research Report. Research report or media project accompanied by an abbreviated Research Report, directed by a minimum of one member of the graduate faculty in the College of Mass Communication and Media Arts. A "Research Report" must be submitted to the Graduate School. The Research Report is the synthesis of

existing literature on a specific topic or the contextualization of an original media project. Public presentation of the project required. Restricted to: PMMM major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

591-1 to 6 Readings. Supervised readings on subject matter not covered in regularly scheduled courses. Graduate students limited to three credits per semester. Prerequisite: written consent of instructor and area head.

592-3 Master's Seminar. This course orients students to graduate level study in mass communication and media arts. Applied general research skills, literature reviews and proposal writing among other topics are covered. Students work on directed-projects, culminating in a proposal for future research or media production. Restricted to: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

593-6 (3 or 6 per semester) MFA Final Creative Project. Supervised independent creative work leading to the completion of the MFA creative project requirement. Registration for six hours of 593 is required for each MFA candidate. Registration may be for 3 hours in two semesters or 6 hours in one semester. Course fee: \$50. Prerequisite: CMCMA MFA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

594-3 Practicum. Study, observation and participation in activities related to the fields of Mass Communication and the Media Arts such as internships in related professional organizations. Restricted to: CMCMA majors or consent of the chair of the Multimedia Graduate Committee and instructor.

595-2,2 Ph.D. Proseminar. Provides Ph.D. Students in the College of Mass Communication and Media Arts a general orientation to the program. Forum for further discussion of the topics and issues raised in visiting lectures scheduled through the college, which students will be required to attend. Provides a framework for preparation for the annual MCMA research convention at which students will be required to present. Prerequisites: CMCMA major or consent of instructor or director of graduate studies in Mass Communication and Media Arts.

596-1 to 6 (1 to 3, 1 to 3, 1 to 3) Independent Study. Supervised research or independent creative work, the area of study to be determined by the student in consultation with instructor. Prerequisite: written consent of instructor and area head.

597-3 to 6 Final Project Research. Independent investigation or original creation of exhibition quality including a research component and directed by committee of at least three faculty. The chair will teach in the student's concentration. The committee must formally hear and approve a project proposal before the student creates the project. Requires LD: Letter grade/DEF.

598A-1 to 6 Final Creative Project – Cinema. Supervised independent creative work leading to the completion of the MFA creative project requirement. Registration for six

hours of 598a is required of each MFA candidate. Equipment usage fee: \$50. Prerequisite: admission to the cinema concentration in the College of Mass Communication and Media Arts MFA program and consent of instructor.

598B-1 to 6 Final Creative Project – Photography. Supervised independent creative work leading to the completion of the MFA creative project requirement. Registration for six hours of 598b is required of each MFA candidate. Laboratory fee: \$25. Prerequisite: admission to the photography concentration in the College of Mass Communication and Media Arts MFA program and consent of instructor.

599-1 to 6 Thesis. Thesis requirements may be satisfied only by a written thesis for an MA in Media Theory and Re-

search and by a creative thesis for an MFA in Mass Communication and Media Arts. Minimum of three hours required for the MA in MTR degree and minimum of six hours required for MFA in MCMA. Graded S/U. Prerequisite: MTR or MFA major.

600-1 to 24 (1-12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 Continuing Enrollment. For graduate students who are working on their thesis. The student must have completed three thesis hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Courses (RT)

403- Lighting for Television. The class covers typical lighting situations encountered in the field of television. Practical exercises are used extensively. Lab fee: \$44. Prerequisite: RT-365 or concurrent enrollment

405-3 Media Economics. Focus on economic and financial forces affecting the media industries. Study of the economic practices and impacts of corporate mergers and synergies, global integration of media firms, multi-stream revenue generation, barriers to entry and regulatory constraints. Prerequisite: C or better in RT 200 and consent of instructor.

430-3 News and Public Affairs Programming. Examination of history and scope of news and public affairs programming. Effects of public affairs on programs and audiences. Responsibility of radio and television stations in news and public affairs and community relations. Ethical issues in news and public affairs and the impact of new media on journalism will be explored. Prerequisite: senior standing and C or better in 200.

450-3 Television Documentary Production and Critique. An overview of the development of various types, styles and schools of major documentary production including analysis of American and International documentaries. Students will also research, write and produce several short form documentaries. Lab fee: \$55. Prerequisite: 365 or consent of instructor. 465 recommended.

455-3 Oral History, Story-Telling and Media. (same as HIST 498). This course will develop an appreciation of the field of oral history, methodological concerns and applications. Students will learn about the oral history process, including interview preparation and research, interview technique, the nature and character of evidence, transcribing, and legal and ethical concerns. Prerequisites: Junior or Senior standing.

457-3 Sports Marketing and Media Relations. The core issues of marketing media products in a variety of contexts, such as launching a television program or series, opening a film, introducing an Internet website or application. Attention to branding and media planning, including developing

an online marketing strategy. Laboratory fee: \$45. Prerequisite: C or better in RT 200 and consent of instructor.

461-3 Multimedia Production. Student can learn the fundamental concepts and skills necessary to produce simple interactive multimedia presentations using an assortment of media. Laboratory fee: \$50. Prerequisite: senior standing and consent of instructor.

463-3 Sound Art and Practice II. This course allows students to explore sound as an art form. During the semester, students create original sound works and learn hands-on approaches to technology, which include building low cost microphones. Experimental sound synthesis and original approaches to creative sound will be explored as well as methods of collaboration and exhibition. Prerequisite: Consent of instructor. Lab Fee: \$55.

464-3 Audio Documentary and Diversity. (Same as Women's Studies 464). The purpose of this course is the creation of short and long form audio documentaries by students, regardless of production background. It will introduce students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to investigate an issue or document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity and class during the planning, gathering and production stages of the documentary. Course open to non-majors. Laboratory fee: \$55.

465-3 Advanced Television Production. Instruction and practical experience in the development of programming for television. Students will produce individual and/or small group project for broadcast and follow the projects through from concept to completion. Many of the projects will air on WSIU-TV. Laboratory fee: \$55. Prerequisite: 365 or consent of instructor.

466-3 Television and Video Graphics. Using current software, giving students hands-on experience in designing, developing and creating graphics packages for television and video production. Lab Fee: \$50.00. Prerequisite: RT 365A or RT 365B.

467-3 International Broadcasting. Global media history, main theories, and current developments. The significance of global trends for local and regional media and cultures. Prerequisite: C or better in RT 200 and RT 300 and senior standing, or consent of instructor.

469-3 Video for Non-majors. Basic shooting and editing to students interested in using video for purposes other than professional television production, such as education, business, or Web page development. The course surveys video formats and applications. Students produce projects using editing and special effects. Credit not given to Radio-Television majors. Lab fee: \$55. Prerequisite: consent of instructor.

470-3 Television News Field Production. Advanced field reporting for television. Students will work under the supervision of the instructor to develop, investigate and report news stories for television. This process will also study the development and production of the mini-documentary. Class will utilize professional grade video recorders, cameras and editing systems. Lab fee: \$55. Prerequisite: 370 or consent.

475-3 MIDI Production Studio. Comprehensive study of sequencing techniques, editing, sampling and hardware and software based instruments will be applied with hands-on exercises and projects. Skills developed in this course will enable students to creatively utilize the most current MIDI technology for use in writing, arranging, recording and manipulating music and audio for albums, jingles, and film/television. Prerequisite: RT375 or consent of instructor. Lab fee: \$55.

476-3 Creative Audio Producing. This course puts the student in the role of recording producer, including responsibility for all decision-making during project development and production. Includes selection of material, budgeting, contracts, scheduling, performances, and all aspects of recording. Emphasis is placed on communication with clients, artists and engineers. Related elements include publishing, copyright and contracts. Prerequisite: consent of instructor. Lab fee: \$55.

477-3 Investigative Reporting for TV, Radio, Online. Each student will choose one topic and produce a story with multimedia elements. Students will do in depth research, conduct interviews, and investigate issues and topics of their choice, with approval of the instructor. The latest investigative techniques will be explored, as well as legal and ethical issues. Stories can air on public television or radio, or appear online. Restricted to: Senior standing.

479-3 Multi-Camera Field Production. Concentration on the techniques, conventions and implementation of live-event, multi-camera production in the field, including concerts, awards shows, and sports. Lab Fee: \$55 Prerequisite: RT365A and RT 365B or consent of instructor.

480-3 Emerging Media. Examination of developments in emerging media, including Internet applications, mobile media, and gaming, among others. Exploration of the impact of emerging media on traditional media cultures and

economies. Prerequisite: Senior standing or consent of instructor.

481-3 Client-Based Video Design. A preproduction course that includes creative problem solving, project management, working with clients, budgeting, design theory and script writing. Assesses multiple platforms for video creation and delivery to targeted audiences. Prerequisite: 365 or concurrent enrollment or consent of instructor.

482-3 Advanced Client-Based Production. Students work on one or more actual client projects. The class simulates a production house operation. Working in teams, students are responsible for budgeting, working with clients, scripting, shooting, editing, and follow-through on the project. Lab fee: \$45. Prerequisite: 465 or 481.

483-3 Script to Screen I. In sequence with RT 484, Script Screen II. Script to Screen I concentrates on scriptwriting for serial fictional Television—situation comedies and dramas. Students analyze structure, form and content of TV shows and scripts and write two full-length television scripts. Some scripts from the class will be produced in RT 484. Lab fee \$45. Prerequisite: Senior Standing and RT 383, or consent of the instructor.

484-3 Script to Screen II. In sequence with RT 483, Script to Screen I. In this course, students produce a pilot for sitcom or dramatic television program, from scripts written by students in RT 483. Topics include casting, budgeting, scheduling, script analysis, location management, production design, staging, lighting, directing and acting for the camera. Lab Fee: \$55. Prerequisite: Senior Standing, RT 365A and RT 365B, or consent of the instructor.

485-3 Digital Post Production. Students will examine all aspects of the postproduction process. The course combines editing theory and practice with critiquing professional programs and practical editing exercises. Laboratory fee: \$55. Prerequisite: 365.

486-3 Broadcast Advertising Production. (Same as Journalism 408) Offered jointly with Advertising/IMC. Projects combine expertise in teams to script, produce, post-produce, edit and present broadcast commercials. Lab fee: \$55. Prerequisite: 365, or 383, or Journalism.303.

487-3 3D Animation I: Modeling. In this course, students will gain a solid foundation in creating 3D computer graphics using industry standard computer software and hardware. Through analysis and practice, students will develop an understanding of the principles of 3D modeling, lighting, texturing and rendering. Conceptual design and professional practices will also be addressed. Skills learned in this course will prepare students for the 3D Animation II class.

488-3 3D Animation II: Animation. This intermediate course builds upon the skills learned in the 3D Animation I course, and will focus on narrative development, motion design and creating visual effects in 3D scenes using industry standard practices. Topics include key frame animation, inverse kinematics, special effects using dynamics and the application of physics-based properties to 3D ge-

ometry. A term project utilizes the creative and technical skills explored in class.

489-2 to 9 Electronic Media Workshop. Advanced work in various areas of electronic media. Lab fee: \$55. Prerequisite: consent of instructor.

490-3 3D Animation III: Production Studio. This advanced course builds upon the skills mastered in the 3D Animation I and II courses. Students walk through the 3D animation production cycle to produce a high-quality 3D animation suitable for portfolio exhibition. Class critiques and project analyses are used to direct students through the production process. This course advances students' knowledge of industry-standard 3D modeling, animation, visual effects and rendering practices.

496-3 Sound and Moving Image. This course examines in detail the relationship of sound and moving images. It traces intertwined histories, revealing important collaborations and technological developments that set precedents for both film and video. While the primary focus of this course is the artistic creation of soundtracks, we will also explore musical scoring and orchestration as utilized by film and television composers. Students will learn about and create sound designs, Foley sound and mix to picture sessions. Prerequisite: consent of instructor. Lab fee: \$55.

598-1 to 3 Research Report. One to three hours required of all non-thesis students writing a research paper and engaging in a companion creative project. Graded S/U only.

599-1 to 6 Thesis. Thesis requirements may be satisfied only by a traditional written thesis. Maximum of six hours may be counted toward degree requirements.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

MATHEMATICS

www.math.siu.edu/
gradinfo@math.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Ban, Dubravka, Associate Professor, Ph.D., University of Zagreb, Croatia, 1998; 2002. Algebra, Representation theory, Automorphic L-functions.

Bhattacharyya, Bhaskar, Professor, Ph.D., University of Iowa, 1993; 1993. Order restricted statistical inference, I-projections, linear models, multivariate analysis.

Budzban, Gregory, Professor, Ph.D., University of South Florida, 1991; 1991. Probability on algebraic structures, markov random fields, neural networks.

Burton, Theodore A., Professor, *Emeritus*, Ph.D., Washington State University, 1964; 1966.

Clark, Lane, Professor, Ph.D., University of New Mexico, 1980; 1991. Combinatorics and graph theory.

Crenshaw, James A., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1967; 1967.

Danhof, Kenneth, Professor, *Emeritus*, Ph.D., Purdue University, 1969; 1969.

Dharmadhikari, Sudhakar, Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1962; 1978.

Earnest, Andrew G., Professor and *Chair*, Ph.D., Ohio State University, 1975; 1981. Algebra and algebraic number theory, arithmetic theory of quadratic forms.

Feinsilver, Philip, Professor, Ph.D., New York University (Courant), 1975; 1978. Probability theory, representation theory.

Fitzgerald, Robert W., Professor, Ph.D., University of California-Los Angeles, 1980; 1982. Quadratic forms, algebra.

Foland, Neal E., Professor, *Emeritus*, Ph.D., University of Missouri, 1961; 1965.

Gregory, John, Professor, *Emeritus*, Ph.D., University of California, Los Angeles, 1969; 1972.

Grimmer, Ronald C., Professor, *Emeritus*, Ph.D., University of Iowa, 1967; 1967.

Hooker, John W., Professor, *Emeritus*, Ph.D., University of Oklahoma, 1967; 1967.

Hughes, Harry R., Associate Professor, Ph.D., Northwestern University, 1988; 1989. Stochastic processes, stochastic geometry.

Hundley, Joseph, Assistant Professor, Ph.D., Columbia University, 2002; 2007. Representation theory, automorphic forms and L-functions.

Hunsaker, Worthen N., Professor, *Emeritus*, Ph.D., Washington State University, 1966; 1969.

Jeyaratnam, Sakthivel, Professor, Ph.D., Colorado State University, 1978; 1981. Statistics, linear models, variance components, robust inference.

Kammler, David W., Professor, *Emeritus*, Ph.D., University of Michigan, 1971; 1971.

Kirk, Ronald B., Professor, *Emeritus*, Ph.D., California Institute of Technology, 1968; 1968.

Koch, Charles, Assistant Professor, *Emeritus*, Ph.D., University of Illinois, 1961; 1966.

Kocik, Jerzy, Associate Professor, Ph.D., Southern Illinois University, 1989; 2002. Differential Geometry and Lie Algebras.

Langenhop, Carl E., Professor, *Emeritus*, Ph.D., Iowa State University, 1948; 1961.

Mark, Abraham M., Professor, *Emeritus*, Ph.D., Cornell University, 1947; 1950.

Maxwell, Charles, Professor, *Emeritus*, Ph.D., University of Illinois, 1955; 1963.

McSorley, John, Associate Professor, Ph.D., University of Oxford, England, 1988; 2004. Combinatorics, graph theory, design theory.

Mohammed, Salah-Eldin A., Professor, Ph.D., University of Warwick, England, 1976; 1984. Functional differential equations, stochastic differential equations, global analysis.

Moore, Robert A., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1961; 1965.

Mugdadi, Abdel-Razzaq, Associate Professor, Ph.D., Northern Illinois University, 1999; 2000. Nonparametric statistical methods and goodness of fit tests.

Neuman, Edward, Professor, Ph.D., University of Wroclaw, Poland, 1972; 1984. Numerical analysis, spline functions, approximation theory, special functions.

Olive, David, Associate Professor, Ph.D., University of Minnesota, 1998; 1999. Applied robust statistics, regression graphics, applied probability.

Paine, Thomas B., Assistant Professor, *Emeritus*, Ph.D., University of Oregon (Eugene), 1966; 1966.

Panchapakesan, S., Professor, *Emeritus*, Ph.D., Purdue University, 1969; 1970.

Parker, George D., Associate Professor, Ph.D., University of California at San Diego, 1971; 1972. Differential geometry, classical geometry, linear programming, computer modeling of coal industry and environmental legislation.

Patula, William T., Professor, *Emeritus* Ph.D., Carnegie-Mellon University, 1971; 1972.

Pedersen, Franklin D., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1967; 1965.

Pericak-Spector, Kathleen A., Professor, Ph.D., Carnegie-Mellon University, 1980; 1981. Hyperbolic partial differential equations, continuum mechanics, science education.

Porter, Thomas, Professor, Ph.D., University of New Mexico, 1990; 1990. Combinatorial analysis, graph theory.

Redmond, Donald, Associate Professor, Ph.D., University of Illinois, 1976; 1979. Analytic number theory, elementary number theory, classical analysis, history of mathematics.

Schurz, Henri U., Associate Professor, Ph.D., Humboldt University (Berlin), 1997; 2001. Stochastic analysis, stochastic dynamical systems, mathematical finance.

Spector, Scott J., Professor, Ph.D., Carnegie-Mellon University, 1978; 1981. Continuum mechanics, elasticity, nonlinear partial differential equations.

Sullivan, Michael C., Professor, Ph.D., The University of Texas at Austin, 1992; 1996. Topological Dynamics.

Tall, Issa A., Assistant Professor, Ph.D., National Institute of Applied Science of Roen, France, 2000; 2006. Control theory, dynamical systems, differential geometry.

Wallis, Walter D., Professor, *Emeritus*, Ph.D., University of Sydney, 1968; 1985.

Wright, Mary H., Professor, Ph.D., McGill University, Montreal, Quebec, 1977; 1980. Rings and modules:

structure of modules, prime ideals and localization over serial rings with Krull dimension.

Xiao, Mingqing, Professor, University of Illinois at Urbana-Champaign, 1997; 1999. Partial differential equations, dynamical systems, control theory and applications

Xu, Dashun, Assistant Professor, Ph.D., Memorial University of Newfoundland, St. John's, Canada, 2004; 2006. Mathematical biology.

Xu, Jianhong, Assistant Professor, Ph.D., University of Illinois, 1997; 2005. Partial differential equations, control theory, optimization theory, dynamical systems, computational science.

Yucas, Joseph, Professor, Ph.D., Pennsylvania State University, 1978; 1980. Algebra, combinatorics.

Zeman, Marvin, Professor, Ph.D., New York University, 1974; 1979. Partial differential equations, integro-differential equations, numerical analysis.

The Department of Mathematics offers graduate degree programs leading to the Master of Arts or Master of Science degree in mathematics and the Doctor of Philosophy degree in mathematics. Students in the master's program can choose from a rich assortment of courses in both pure and applied mathematics and statistics. Each master's degree candidate works closely with a professor in writing a research paper in an area of interest to the student. A double major at the master's level between mathematics and a related discipline is also an option. At the doctoral level, a student may specialize in any one of a large number of fields such as algebra, applied mathematics, combinatorics, computational mathematics, control theory, differential equations, geometry, numerical analysis, probability, or statistics. Interdisciplinary programs are also available.

The department is committed to providing a challenging and rewarding experience for its graduate students. With over 30 graduate faculty and approximately 33 full-time graduate students, the department offers individual attention and mentoring, strives to establish a friendly, supportive environment, and assists students as much as possible to achieve their professional goals. Graduate students have 24 hour access to the departmental computer lab which has thirty state of the art PCs, all with internet connections. For more computing needs, students can access the university Unix computer servers from the lab.

Students interested in the teaching of mathematics may select a minor concentration in education within the Master of Science program in mathematics. Minor work for graduate degrees in other fields, which allow for a minor, is also offered.

Acceptance for graduate study in mathematics and subsequent continuation in the graduate program are at the

discretion of the Department of Mathematics, provided that the student has been admitted to the Graduate School and meets the retention standards of the Graduate School. All applicants for the graduate program are considered for teaching assistantships. In order to be considered for a fellowship the applicant must take the GRE exam, and all applicants are strongly encouraged to take the GRE General Test.

Prospective students are encouraged to contact the Department of Mathematics at <gradinfo@math.siu.edu> or the web site at <www.math.siu.edu> for application forms or additional information.

In addition to the general rules, regulations, and requirements of the Graduate School, the following specific requirements pertain to the degrees available in mathematics.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Mathematics. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Science Degree in Mathematics

Students will be considered for acceptance into the M.S. degree program in mathematics if they have completed an undergraduate major in mathematics or a strong undergraduate minor in mathematics together with a major in a closely related discipline.

Once accepted, the requirements are as follows:

1. The candidate must complete a total of at least 30 semester hours of graduate credit approved by the Director of Graduate Studies of which 15 hours must be at the 500 level and at least 21 hours must be in courses (exclusive of 400, 458, 511) offered

by the Department of Mathematics. A minor concentration may be taken outside of the department if approved by the Director of Graduate Studies during the student's first semester in the master's program.

2. The candidate's program must include: (a) Math 452 and Math 419 AND (b) at least one 400- or 500-level mathematics course from two of the following three areas: (1) algebra and analysis (excluding Math 452 and Math 419); (2) geometry and topology (3) probability and statistics. These requirements may be met in whole or in part by means of equivalent courses taken here or elsewhere prior to acceptance for graduate study in the department.
3. The candidate must prepare a research paper or thesis (3 hours credit in MATH 595 or 599) under the supervision of a research adviser and two other faculty members from the department. This committee will be appointed by the Director of Graduate Studies after consultation with all those involved.
4. The candidate must demonstrate competence with the research tool of computer programming. This research tool requirement will be met by passing with a grade of B or better in CS 202 or the equivalent, or by passing a suitable examination given by a faculty member from the Department of Mathematics who has been appointed by the Director of Graduate Studies.
5. The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the research paper or thesis. This examination will be conducted by the 3 members of the candidate's committee and moderated by the research adviser. The student will pass the examination if the research adviser and at least 1 of the other 2 committee members so agree.

Master of Arts Degree in Mathematics

Students will be considered for acceptance into the M.A. degree program in mathematics if they have completed with distinction the equivalent of a strong undergraduate major in mathematics. Once accepted, the requirements are as follows:

1. The candidate must complete a total of 30 semester hours of graduate level mathematics courses of which at least 15 must be at the 500 level.
2. The candidate must complete with a grade of B or better each of the courses MATH 419, 421, 430, 452, 455, and at least 2 of the courses MATH 501, 519, 530. This requirement may be met in whole or in part by means of equivalent courses taken elsewhere.
3. The candidate must demonstrate the ability to read mathematical literature in French, German, or

Russian. This may be certified by passing with a grade of B or better the research tool course 488 offered by the Department of Foreign Languages and Literatures, by passing with a score of 465 or better an examination given by the Educational Testing Service of Princeton, NJ, or by passing a suitable examination given by a faculty member from the Department of Mathematics who has been approved by the Director of Graduate Studies.

4. The candidate must prepare a thesis (3 hours credit in MATH 599) under the supervision of a thesis adviser and 2 other faculty members from the department. This committee will be appointed by the Director of Graduate Studies after consultation with all those involved.

The candidate must demonstrate satisfactory performance on a final oral examination covering the graduate course work and the thesis. This examination will be given by the 3 members of the candidate's committee and chaired by the thesis adviser. The student will pass the examination if the thesis adviser and at least 1 of the other 2 committee members so agree.

Doctor of Philosophy Degree

Students will be considered for acceptance into the doctoral program if they have completed with distinction a graduate program comparable to that required for a master's degree in mathematics, statistics, or computer science at SIUC. Additional evidence of outstanding scholarly ability or achievement (e.g., a high score on the advanced section of the Graduate Record Examination or published research papers of high quality) will lend strength to the application. Students must have completed 419, 421, 430, 452, and 455 or their equivalent before entering the doctoral program.

Once admitted, the requirements are as follows:

1. The candidate must pass the departmental qualifying examination by the end of the January following the second fall semester in the doctoral program. This qualifying examination, which is given twice annually in January and August, covers 3 areas each of which is commensurate with a regularly scheduled 500 level graduate course at SIUC. After consultation with the Director of Graduate Studies candidates will choose the 3 areas over which they are to be examined, with 2 of 3 chosen from MATH 501, 519, 530, 580 including at least one of 501 and 519. The coursework in two courses chosen from the list of four above will not be counted toward completing the major area discussed in 3. below. The third area normally corresponds to another regularly scheduled 500 level mathematics course, but with the approval of the Director of Graduate Studies the third area may be chosen from a related field outside the department. A candidate who fails to pass the

qualifying examination within the allotted time will be dropped from the doctoral program.

2. The candidate must demonstrate competence with two research tools, one of which is a foreign language and the other computer programming. The foreign language research tool requirement will be met by exhibiting the ability to read mathematics in any one of the languages French, German, or Russian. This may be certified by passing with a grade of B or better the research tool course 488 offered by the Department of Foreign Languages and Literatures, by passing with a score of 465 or better an examination given by the Educational Testing Service of Princeton, NJ, or by passing a suitable examination given by a member from the Department of Mathematics who has been appointed by the Director of Graduate Studies. The computer programming research tool requirement will be met by passing with a grade of B or better CS 202 and 220 or their equivalent or by passing a suitable examination given by a faculty member from the Department of Mathematics appointed by the Director of Graduate Studies.
3. Mathematics 501 and 519 or their equivalent are required courses for all doctoral students. The candidate must complete a major area (12 hours) and two minor areas (6 hours each). The course work in the major and minor areas must be at the 500 level and must be exclusive of the courses used to satisfy the qualifying examination. Normally the major and minor areas will be based on courses currently taught in the department. However, one of the minor areas may be taken outside the department, subject to the approval of the Director of Graduate Studies. With regard to the major and two minor areas, at least one of the three must be in an applied area. The final definition of "applied" will be determined by the dissertation adviser.
4. The candidate must file a request with the Director of Graduate Studies to appoint a dissertation committee to supervise the remaining doctoral work. This committee shall consist of 5 members with the candidate's dissertation adviser as chair. At least one member of the committee must represent each of the minor areas, and the dissertation adviser and one other member will represent the major area. One member of the committee will be chosen from outside of the department. This committee will be appointed by the Director of Graduate Studies after consultation with the candidate, the proposed dissertation adviser, the department chair, and the other faculty members involved.
5. The candidate must pass a preliminary examination over the major area and one minor area chosen by the candidate. This examination will normally be

given after satisfying the research tools requirement and within 18 months after passing the qualifying examination. The preliminary examination will consist of a written examination over the major area and an oral examination over the major area and the chosen minor area. This examination will be prepared, administered, and evaluated by the dissertation committee. Any member of the graduate faculty may attend the oral portion of the preliminary examination and (at the discretion of the committee chair) question the candidate. The candidate will pass the preliminary examination provided that 4 members of the committee including the chair so agree. A report on the examination will be included with the candidate's official academic records. In the event that the candidate's performance is unsatisfactory, the committee as a whole shall decide on the time and content of an appropriate re-examination. A candidate who fails the re-examination will be dropped from the doctoral program.

In unusual circumstances a candidate who has passed the preliminary examination may wish to change the major area or dissertation adviser. This will be allowed if the Director of Graduate Studies and department Chair so agree, in which case the dissertation committee will be reconstituted in an appropriate manner. The revised committee may then prescribe additional course work and require the candidate to retake the preliminary examination.

6. The candidate must be officially admitted to candidacy for the Ph.D. degree. This will be done after all of the above requirements have been met.
7. The candidate must complete a dissertation (representing at least 24 hours in MATH 600) under the supervision of the candidate's dissertation adviser. The dissertation adviser and the other 4 members of the dissertation committee will evaluate the quality of the completed work which must conform to high literary and scholastic standards and constitute an original and publishable contribution to mathematics. A final oral examination will be conducted by the dissertation committee. During this examination the candidate will first present the major results of the dissertation and then respond to questions. Any member of the University graduate faculty may attend and (at the discretion of the dissertation adviser) ask related questions. The dissertation will be accepted provided the dissertation adviser and at least 3 of the other 4 members of the committee so agree.

For students interested in the doctoral degree program with an emphasis in computational mathematics, the entrance requirements are 419, 421, 452, and CS 451. Once students are admitted, the preceding paragraphs 1 through 7 apply except for the following. Courses for the

qualifying exam are CS 555, one from 501 or 519, and one other 500 level mathematics course (preferably 549 or 575). For the preliminary examination, computer science should be a minor area. The program must also include mathematics 501, 519, and 549 or their equivalents.

As a matter of policy, the Department of Mathematics does not provide any student working for a master's degree financial support for more than two years nor a Ph.D. student more than four years past the master's or master's equivalent.

Courses (MATH)

405-3 Intermediate Differential Equations. This course features the study of several sets of differential equations with the aid of computers. The equations are actual applications taken from the areas of biology, chemistry, economics, engineering, finance, medicine, and physics; where possible, problems will be chosen to match student's interests. Student from these areas are particularly welcome. Basic theory of differential equations is cited, particularly as it is needed or encountered in the problems. Prerequisite: 305, but highly motivated students with a good calculus background and an interest in learning to use mathematical software may enroll with permission of the instructor.

406-3 Linear Analysis. An elementary introduction to function spaces and operators as used in quantum mechanics, partial differential equations, etc. Topics include: discrete and continuous models for the vibrating string; separation of variables and eigenfunction analysis; inner product spaces; operators on inner product spaces; the spectral theorem for Hermitian operators on finite dimensional spaces with selected applications; the Courant-Fisher max-min characterization of eigenvalues; the spectral theorem for compact Hermitian operators with selected applications to Sturm-Liouville boundary value problems and Fredholm integral equations. Prerequisite: 221 and 305.

407-3 Introduction to Partial Differential Equations. The purpose of this course is to teach the student how to solve linear partial differential equations that arise in engineering and the sciences. Topics studied will include: the heat equation, the wave equation, Laplace's equation, separation of variables, boundary and initial value problems, uniqueness via the energy methods, the maximum principle, and characteristics. Solutions to the vibrating string and dissipation of heat in a bar will be discussed. Prerequisite: 251 and 305.

409-3 Fourier Analysis. A practical modern introduction to the theory, techniques and applications of elementary Fourier analysis. Topics include: the Fourier synthesis and analysis equations for periodic and aperiodic functions on the reals and the integers; convolution; the calculus for finding Fourier transforms, Fourier series, and DFT's; operators and their Fourier transforms; the FFT and related algorithms; generalized functions, such as Dirac's delta, the comb, and $1/x$; and selected applications of Fourier analysis to sampling theory, partial differential equations,

probability, the synthesis of musical tones, diffraction, and wavelets. Prerequisite: 221 and 305.

411-1 to 6 (1 to 3, 1 to 3) Mathematical Topics for Teachers. Variety of short courses in mathematical ideas useful in curriculum enrichment in elementary and secondary mathematics. May be repeated as topics vary. Does not count toward a mathematics major.

412-3 Problem Solving Approaches to Basic Mathematical Skills. Content of basic skills at all levels of education and the development of these skills from elementary school through college; emphasis on problem solving and problem solving techniques; determination of student skills and proficiency level. Credit may not be applied toward degree requirements in mathematics. Prerequisite: MATH 314 or MATH 321 or CI 321.

417-3 Applied Matrix Theory. Selected applications of matrices to physics, chemistry and economics. This material is also useful for engineering and computer science. Topics will include matrix representation of symmetry groups, non-negative matrices and the subsidy problem, location of eigenvalues. Prerequisite: 221.

418-3 Computer Algebra Systems. This course presents modern computer algebra systems (CAS) as a research tool in mathematics. The use of a CAS in the preparation of reports, theses and dissertations will also be covered. Topics will include: Solving differential equations with a CAS; Plotting techniques with a CAS; Symbolic packages for such areas as abstract algebra, number theory; and combinatorics: Programming with a CAS; Exporting result to TeX or word processing software; The AMS-LaTeX package. Prerequisite: graduate standing and consent of instructor.

419-3 Introduction to Abstract Algebra II. A detailed study of polynomial equations in one variable. Solvable groups and the Galois theory of field extensions are developed and applied to extensions of the quadratic formula, proving the impossibility of trisecting an angle with only a straight-edge and a compass, and to the basic facts about finite fields as needed in coding theory and computer science. Prerequisite: 319 or consent of instructor.

421-3 Linear Algebra. The extension of basic linear algebra to arbitrary scalars. The theory and computation of Jordan forms of matrices (as needed, e.g., for certain diffusion equations). Inner products, quadratic forms and Sylvester's Law of Inertia. Prerequisite: 221.

425-3 Introduction to Number Theory. Properties of integers, primes, divisibility, congruences, quadratic forms,

diophantine equations, and other topics in number theory. Prerequisite: 319 or consent of department.

430-3 Introduction to Topology. Study of the real line and the plane, metric spaces, topological spaces, compactness, connectedness, continuity, products, quotients and fixed point theorems. This course will be particularly useful to students who intend to study analysis or applied mathematics. Prerequisite: 302 or 352 or consent of instructor.

435-3 Elementary Differential Geometry. An introduction to modern differential geometry through the study of curves and surfaces in R^3 . Local curve theory with emphasis on the Serret-Frenet formulas; global curve theory including Fenchel's theorem; local surface theory motivated by curve theory; global surface theory including the Gauss-Bonnet theorem. Prerequisite: 251 and 221.

447-3 Introduction to Graph Theory. (Same as Computer Science 447.) Graph theory is an area of mathematics which is fundamental to future problems such as computer security, parallel processing, the structure of the World Wide Web, traffic flow, and scheduling problems. It is also playing an increasingly important role within computer science. Topics covered include: trees, coverings, planarity, colorability, digraphs, depth-first and breadth-first searches. Prerequisite: 349 or consent of instructor.

449-3 Introduction to Combinatorics. (Same as Computer Science 449.) This course will introduce the student to various basic topics in Combinatorics that are widely used throughout applicable mathematics. Possible topics include: elementary counting techniques, pigeonhole principle, multinomial principle, inclusion and exclusion, recurrence relations, generating functions, partitions, designs, graphs, finite geometry, codes and cryptography. Prerequisite: 349 or consent of instructor.

450-3 Methods of Advanced Calculus. This course presents multivariable calculus, an area that is fundamental to fields such as continuum mechanics, differential geometry, electromagnetism, relativity, and thermodynamics. Topics will include: parametric curves and surfaces, the inverse and implicit function theorems, contraction mapping and fixed point theorems, differentials, convergence of multivariate integrals, coordinate systems in space, Jacobians, surfaces, volumes, and Green's, Gauss', and Stokes' theorems. The emphasis in this course will be on explicit computations. Prerequisite: 251.

452-3 Introduction to Analysis. This course develops the basic mathematical tools that are necessary for the understanding of all other advanced courses in analysis. Its principal content is a rigorous development of one-variable calculus. Topics will include: sets, axioms for the real numbers, continuity and limits, differentiation, the Riemann integral, and infinite sequences and series of functions. If time allows, additional topics may be chosen from areas such as Riemann-Stieltjes integration or the analysis of functions of several variables. Prerequisite: 250.

455-3 Complex Analysis with Applications. This course introduces the mathematical techniques that are commonly used to analyze those problems in the sciences and engineering that are inherently two dimensional in nature. Its content is the analysis of differentiable functions of a single complex variable. Topics will include: the complex plane, analytic functions, the Cauchy-Riemann equations, line integrals, the Cauchy integral formula, Taylor and Laurent series, the residue theorem, and conformal mappings. Applications will be made to topics selected from fluids, electrostatics, and control theory. Prerequisite: 251 or consent of instructor.

458-3 Statistical Methods in Business and Industry. The course gives an introduction to statistical techniques using a limited calculus background. Topics covered include probability; random variables; standard distributions such as the binomial, Poisson, normal and exponential; estimation including the method of moments and of maximum likelihood; tests of hypotheses; simple linear regression. Applications to business and engineering problems will be emphasized. The course does not count toward a mathematics major or a mathematics minor. Prerequisite: 140 or equivalent.

460-3 Transformation Geometry. Geometry viewed as the study of properties invariant under the action of a group. Topics include collineations, isometries, Frieze groups, Leonardo's Theorem, the classification of isometries of Euclidean and hyperbolic geometries. Recommended elective for secondary education majors in mathematics. Prerequisite: 221 and 319.

471-3 Optimization Techniques. (Same as Computer Science 471.) An elementary introduction to algorithms for finding extreme values of nonlinear functions of several variables with and without constraints. Topics include: convex sets and functions; the arithmetic-geometric mean inequality; Taylor's theorem for functions of several variables; positive definite, negative definite, and indefinite matrices; iterative methods for unconstrained optimization such as the method of steepest descent; the Kuhn-Tucker algorithm; unconstrained and constrained geometric programming; Lagrange multipliers, and penalty function methods. Students will use a computer to study the numerical properties of these algorithms. Prerequisite: 250 and 221.

472-3 Linear Programming. (Same as Computer Science 472.) An introduction to the theory for finding extreme values of linear functionals subject to linear constraints. Topics include: recognition, formulation, and solution of real problems via the simplex algorithm; development of the simplex algorithm; artificial variables; the dual problem and the duality theorem; complementary slackness; sensitivity analysis; and applications of linear programming to integer programming, cutting plane algorithms, the distribution problem, the transportation problem, and the assignment problem. Students will use a computer to study

the numerical performance of these algorithms. Prerequisite: 221.

473 (3,3) Statistical Topics in Actuarial Science. (Parts A and B may only be taken once each.)

A: Reliability and Survival Models: an introduction to the statistical analysis of data on lifetimes. Topics covered include hazard functions and failure distributions; estimation and hypothesis testing in life testing experiments with complete as well as censored data. Prerequisite: 483, 480, or consent of instructor.

B: Time Series: An introduction to time series. Topics include AR, MA and ARIMA models; estimation, data analysis and forecasting with time series models. Prerequisite: 483, 480, or consent of instructor.

475-6 (3,3) Numerical Analysis. (Same as Computer Science 475.) A practical introduction to the theory and techniques for computation with digital computers. Topics include: the solution of nonlinear equations; interpolation and approximation; solution of systems of linear equations; numerical integration, solution of ordinary differential equations; computation of eigenvalues and eigenvectors; and solution of partial differential equations. Students will use MATLAB to study the numerical performance of the algorithms introduced in the course. Prerequisite: (a) 221 and 250 (b) 305 and 475a.

480-3 Probability, Stochastic Processes and Applications I. An introduction to the central topics of modern probability including some elementary stochastic processes. A student taking this course will learn about random variables and properties, including sum of independent random variables and the Central Limit Theorem. In addition, random walks and discrete-time finite state Markov chains will be introduced. Applications to random number generators and image and signal processing will be discussed. Principal topics studied, in addition to those already listed, include generating functions, conditional probability and independence, expectation and moments, covariance and correlation, and characteristic functions. Prerequisite: 251.

481-3 Probability, Stochastic Processes and Applications II. A continuation of Part 1 with additional emphasis on stochastic processes and their applications. Students will see a thorough introduction to Markov processes and Martingales. Principal topics include the laws of large numbers, classification of states, recurrence and convergence to the stationary distribution in Markov chains, birth processes and Poisson processes, stopping times, and the Martingale convergence theorem. Additional topics may include the renewal equation, stationary processes and the ergodic theorem and their applications, diffusion, and Kalman filtering with applications to signal processing and estimation. Prerequisite: 480.

483-4 Mathematical Statistics in Engineering and the Sciences. The course develops the basic statistical techniques used in applied fields like engineering, and the physical and natural sciences. Principal topics include

probability; random variables; expectations; moment generating functions; transformations of random variables; point and interval estimation; tests of hypotheses. Applications include one-way classification data and chi-square tests for cross classified data. Prerequisite: 250.

484-3 Applied Regression Analysis and Experimental Design. The course provides an introduction to linear models and design of experiments used extensively in applied statistical work. Principal topics include linear models; analysis of variance; analysis of residuals; regression diagnostics; randomized blocks; Latin squares; factorial designs. Applications include response surface methodology and model building. Computations are an integral part of the course and will require the use of a statistical package such as SAS. Prerequisite: 483 and 221 or consent of instructor.

485-3 Applied Statistical Methods. The course gives an introduction to sampling methods and categorical data analysis which are widely used in applied areas such as social and biomedical sciences and business. In sampling methods, topics covered include: simple random and stratified sampling; ratio and regression estimators. In categorical data analysis; topics covered include: contingency tables; loglinear models; logistic regression; model selection; use of a computer package. Prerequisite: 483 or consent of instructor.

490-3 Topics in Mathematics. Selected topics in mathematics chosen from such areas as: (a) Financial Mathematics, Mathematical Biology or Actuarial Mathematics (b) Probability, Statistics or Stochastic Processes (c) Mathematical topics not including Statistics, such as Operations Research, Cryptography and High Dimensional computing in Numerical Analysis, etc. May be repeated up to 3 times as topics vary. Prerequisite: Consent of Instructor.

495-1 to 6 Special Topics in Mathematics. Individual study or small group discussions in special areas of interest under the direction of a member of the faculty. Prerequisite: consent of chair and instructor.

501-3 Measure and Integration. This course is an introduction to measure theory and the Lebesgue integral. Its purpose is to develop many of the advanced mathematical tools that are necessary for the understanding of all other advanced courses in analysis. Topics will include: measures and measurable functions, Egoroff's theorem, the Lebesgue integral, Fatou's lemma, the monotone and dominated convergence theorems, functions of bounded variation and absolutely continuous functions, L^p -spaces, the Radon-Nikodým theorem, product measures, and Tonelli's and Fubini's theorems. Prerequisite: 452.

502-3 Linear Analysis. This course is an introduction to analysis in linear infinite-dimensional spaces. Its purpose is to introduce function spaces that are used in the formulation of modern mathematical models in economics, the sciences, and engineering involving topics such as

control theory, partial differential equations, and probability. Topics will include: Banach spaces, the Hahn-Banach Theorem, the uniform boundedness principle, the closed-graph theorem, the open-mapping theorem, weak convergence, reflexive and separable spaces, adjoint operators, Hilbert spaces, and the Riesz representation theorem. Prerequisite: 501.

505-3 Ordinary Differential Equations. Existence and uniqueness theorems; general properties of solutions; linear systems; geometric theory of nonlinear equations; stability; self-adjoint boundary value problems; oscillation theorems. Theory will be illustrated with computer simulation of several real-world problems. Prerequisite: 452 and 421 or consent of instructor.

506-1 to 12 Advanced Topics in Ordinary Differential Equations. Selected advanced topics in ordinary differential equations chosen from such areas as: stability, oscillations, functional differential equations, perturbations, boundary value problems. Prerequisite: consent of instructor.

507-3 Partial Differential Equations. This course introduces the student to the mathematical techniques that are used to analyze qualitative properties of solutions to partial differential equations that arise in engineering and the sciences. Topics studied will include: function spaces including Sobolev spaces; weak derivatives; the Sobolev and Poincaré inequalities; existence, uniqueness, and continuous dependence for model equations. Prerequisite: 407 and 501.

508-3 Integral Equations. Origins of integral equations. Volterra equations of the first and second kind. Fredholm equations of the first and second kind. Fredholm's alternative theorem. The resolvent equation. Orthonormal eigensystems of a symmetric Fredholm operator. The Hilbert-Schmidt expansion theorem and its applications to Sturm-Liouville problems. Exact and approximation methods of solution. Prerequisite: 452 and 406 or 421.

511-3 Advanced Topics in the Teaching of Mathematics. (Same as Curriculum and Instruction 529.) Selected advanced topics in the teaching of mathematics chosen from such areas as: pedagogical theories; instructional strategies; applications of mathematics; problem solving. This course is counted by the Mathematics department only as part of an approved minor. Prerequisite: consent of instructor.

512-1 to 21 Topics in Mathematics for Teachers of Elementary, Middle School and Junior High Mathematics. (a) Abstract Algebra. (b) Geometry. (c) Probability and Statistics. (d) Sets, Logic and Number Systems. (e) Applications of Mathematics. (f) Algebra. (g) History of Mathematics. This course is counted by the Mathematics department only as part of an approved minor.

513-1 to 27 Topics in Mathematics for Teachers of Secondary Mathematics. (a) Abstract Algebra. (b) Geometry. (c) Probability and Statistics. (d) Sets, Logic

and Number Systems. (e) Applications of Mathematics. (f) Analysis. (g) Discrete Mathematics. (h) Topology. (i) Computer Simulation. This course is counted by the Mathematics department only as part of an approved minor.

516-8 (4,4) Statistical Analysis in the Social Sciences. (a) Descriptive statistics; graphic display of data; concepts of probability; statistical estimation, and hypothesis testing. Applications to social science data. (b) Matrix algebra; general linear model; multivariate statistics, ordinal and nominal measures of associations and causal modeling. Applications to social science data. This course does not give credit toward a mathematics major. Prerequisite: one year of high school algebra or equivalent.

519-3 Algebraic Structures I. Introduction to the basic techniques in the classification of finite groups, including homomorphism theorems, classification of finitely generated abelian groups, Sylow's theorems and classification of small groups, divisibility theory in rings, especially polynomial rings. Prerequisite: 419 or consent of instructor.

520-3 Algebraic Structures II. Algebraic field extensions; splitting fields, algebraic closure, separable and inseparable extensions; finite fields; norms and traces, the fundamental theorem of Galois theory. Free modules, torsion modules, tensor products of modules, finitely generated modules over principal ideal domains, application of abelian groups. Prerequisite: 519.

522-1 to 12 Advanced Topics in Algebra and Number Theory. Selected topics in modern algebra and number theory chosen from such areas as: group theory, commutative algebra, non-commutative algebra, field theory, representation theory, analytical number theory, algebraic number theory, additive number theory. Diophantine approximations, Dirichlet series and automorphic form. Prerequisite: consent of instructor.

525-3 Number Theory. Introduction to modern analytic and algebraic techniques used in the study of quadratic forms, the distribution of prime numbers, diophantine approximations and other topics of classical number theory. Prerequisite: 425.

530-3 Geometry and Topology I. First part of a sequence that provides students with foundational material useful for research in dynamical systems, classical mechanics, relativity as well as other areas of mathematics. Topics include a review of point set topology, an introduction to differentiable manifolds and the fundamental group. Prerequisite: 430 or consent of instructor.

531-3 Geometry and Topology II. Second part of a sequence that provides students with foundational material useful for research in dynamical systems, classical mechanics, relativity as well as other areas of mathematics. Topics include homology and cohomology with differential forms. Prerequisite: 530 or consent of instructor.

532-1 to 12 Topics in Geometry and Topology. Topics may include dynamical systems, topological groups, knot theory, complexity theory, uniform spaces and frames, differential and Riemannian geometry, voting theory and mathematical physics. Prerequisite: consent of instructor.

540-3 Convex Analysis. The course develops the basic results on convex sets and functions which are extensively used in several areas of applied mathematics and in business and engineering. Both finite and infinite dimensional spaces will be discussed. Topics covered include separation theorems, extreme points and the Krein-Milman Theorem. For infinite dimensional spaces elementary aspects of locally convex spaces will be covered. Applications include inequalities, constrained optimization and minimax theory. Prerequisite: 452 or consent of instructor.

549-3 Combinatorial Theory. This course will introduce the student to various advanced topics in Combinatorial theory that are basic to modern methods in applicable mathematics. Possible topics include: Enumeration, Polya-Burnside theory, DeBruijn sequences, Graph theory, Cayley's Theorem, Ramsey's Theorem, Hall's Theorem, Design Theory, Distinct representatives, Latin squares and Finite geometries. Prerequisite: 449 or consent of instructor.

551-3 Functional Analysis. This course will introduce the student to various and advanced topics in functional analysis that are basic to modern methods in differential equations, mathematical physics, probability theory and quantum theory. Possible topics include: Banach algebras, distributions, locally convex spaces, quantum probability, self-adjoint operators, the spectral theory of operators and topological vector spaces. Prerequisite: 502.

553-1 to 12 Advanced Topics in Analysis and Functional Analysis. Advanced topics in analysis and functional analysis from such areas as: harmonic analysis, approximation theory, integration theory, advanced complex variables, topological vector spaces, operator theory, Banach algebras, distribution theory. Prerequisite: consent of instructor.

559-1 to 12 Advanced Topics in Combinatorics. Selected advanced topics in combinatorics chosen from such areas as: graph theory; combinatorial designs; enumeration; random graphs; finite geometry; coding theory; cryptography; combinational algorithms. Prerequisite: consent of instructor.

566-3 Continuum Mechanics. This course will provide a rigorous development of the mechanics of solids and fluids. Topics will include: elements of tensor analysis; kinematics; balance of mass, linear momentum and angular momentum; the concept of stress; constitutive equations for fluid and solid bodies; and invariance of constitutive equations under a change in observer. Applications of continuum mechanics to the solution of problems in materials science will be included as time permits. Prerequisite: 450 or 452.

569-1 to 12 Advanced Topics in Applied Mathematics. Selected advanced topics in applied mathematics chosen from such areas as: continuum mechanics; electromagnetic theory; control theory; mathematical physics. Prerequisite: consent of instructor.

570-1 to 12 Advanced Topics in Optimization. Selected advanced topics in optimization and operations research chosen from such areas as: calculus of variations, optimal control theory, nonlinear programming, convex analysis, non-smooth analysis, new flows, advanced computer simulation, large scale linear programming. Prerequisite: consent of instructor.

572-1 to 12 Advanced Topics in Numerical Analysis. (Same as Computer Science 572.) Selected advanced topics in numerical analysis chosen from such areas as: approximation theory, spline theory; special functions; wavelets; numerical solution of initial value problems; numerical solution of boundary value problems; numerical linear algebra; numerical methods of optimization; and functional analytic methods. Prerequisite: consent of instructor.

574-3 Approximation Theory. A study of techniques for approximating functions by polynomials, trigonometric polynomials, polynomial splines, wavelets, etc. Topics include: existence, uniqueness and characterization of best approximations in normed linear spaces; projection methods for good approximation; the Weierstrass, Muntz-Szasz, and Stone-Weierstrass theorems; degree of approximation and the Jackson theorems; construction of optimal min-max and least squares approximation using rational functions, splines, wavelets. Students will use MATLAB to study the quality of various approximations developed in the course. Prerequisite: 452, 475a, and one of 406, 421.

575-3 Matrix Computations. A practical introduction to modern numerical linear algebra. Topics include: vector and matrix norms; Householder, Givens and Gauss transforms; factorization methods for solving systems of linear equations with roundoff error analysis; QR and SVD methods for solving linear least squares problems; the QR algorithm for computing the eigenvalues of a matrix. Students will use MATLAB to study the algorithms developed in the course. Prerequisite: 475a and one of 406, 421.

580-3 Statistical Theory. The course gives a rigorous introduction to statistical inference. Topics covered include statistical models; sufficiency and completeness; Cramér-Rao bound; Rao-Blackwell theorem; best estimators; most powerful tests; likelihood ratio tests; elements of Bayes and minimax procedures. Prerequisite: 483 or 480.

581-3 Probability. A rigorous, measure-theoretic introduction to probability theory. Principal topics include general probability spaces, product spaces and product measures, random variables as measurable functions, distribution functions, conditional expectation, types of convergence, characteristic functions and the Central Limit

theorem, tail events and 0-1 laws, the Borel-Cantelli lemma, and the weak and strong law of large numbers. Prerequisite: Concurrent course in real variables, 501.

582-1 to 6 Advanced Topics in Probability. Selected advanced topics in probability chosen from such areas as: martingales, Markov processes, Brownian motion, infinitely divisible laws. Prerequisite: consent of instructor.

583-1 to 12 Advanced Topics in Statistics. Selected advanced topics in statistics chosen from such areas as: advanced linear models, advanced experimental design, multivariate statistical analysis, decision theory, advanced nonparametric theory. Prerequisite: consent of instructor.

585-1 to 2 Statistical Consulting. Consulting with university researchers under the supervision of a member of the statistics faculty. A write up of each consultation will be required. Prerequisite: 484 or 485 and consent of instructor.

590-1 to 6 Contemporary Mathematics Research. Lectures on various mathematical topics of current research interest by members of the department and by distinguished visitors. Prerequisite: consent of the graduate adviser.

595-1 to 12 per topic Special Project. An individual project, including a written report. (a) Algebra. (b) Geometry. (c) Analysis. (d) Probability and Statistics. (e) Mathematics Education. (f) Logic and Foundations. (g) Topology. (h) Applied mathematics. (i) Differential Equations. (j) Number Theory (k) Combinatorics and Graph Theory. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 6 Thesis. Minimum of three hours to be counted toward the Master of Arts degree.

600-1 to 30 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MATHEMATICS AND SCIENCE EDUCATION

COLLEGE OF EDUCATION AND HUMAN SERVICES AND COLLEGE OF SCIENCE

Graduate Faculty:

Henson, Harvey, Instructor/Research Project Specialist, Geology, M.S., Southern Illinois University Carbondale, 1989, MSMSEd Co-director.

Lefticariu, Liliana, Assistant Professor, Geology, Ph.D., Northern Illinois University, 2004, 2007.

Lin, Cheng-Yao, Assistant Professor, Curriculum & Instruction, Ph.D., University of Illinois at Urbana-Champaign, 2003; 2004.

Means, Jay C., Professor, Chemistry & Biochemistry and Dean of College of Science, Ph.D. DABT, University of Illinois-Urbana, 1976, 2007.

Mumba, Frackson, Assistant Professor, Curriculum & Instruction, Ed.D., Illinois State University, 2005; 2005.

Renzaglia, Karen, Associate Professor, Plant Biology, Ph.D., Southern Illinois University Carbondale, 1981; 2003.

Tolley, Luke T., Assistant Professor, Chemistry & Biochemistry, Ph.D., University of North Carolina, 2001; 2003.

Tsige, Mesfin, Assistant Professor, Physics, Ph.D., Case Western Reserve University, 2001; 2005.

Wise, Kevin C., Associate Professor, Curriculum & Instruction, Ed.D., University of Georgia, 1983; 1986.

Wright, Mary H., Professor, Mathematics, Ph.D., McGill University, Montreal, Quebec, 1977; 1980. MSMSEd Co-director.

Purpose of the Program

This interdisciplinary M.S. degree program is designed to offer advanced training in mathematics and science education for elementary and middle school teachers. It is designed specifically for in-service teachers seeking additional content knowledge, pedagogical content knowledge, and leadership skills in mathematics and science education. This is a non-thesis, non-research paper program. Candidates are required to complete an Action Research project in lieu of a thesis or research paper. Upon completion of the program, candidates will be eligible for an endorsement in mathematics and science. Program faculty are drawn from various departments in the College of Science and the College of Education.

Admission

Prospective graduate students should have an undergraduate degree in Elementary Education, or closely related field, and should already be certified elementary (K-5, 4-8 or K-8) teachers in Illinois. All application materials should be submitted to any one of the Program Co-directors. Students are required to submit official transcripts from all U.S. schools attended during their last two years of undergraduate study, and also for all graduate work completed. Transcripts are not required from institutions where the student received no degree and was not enrolled for more than 12 semester hours of undergraduate credit, provided that the grades obtained at such institutions are recorded upon the transcript of the college which granted the student's degree. This program requires a nonrefundable \$50.00 application fee, which must be submitted with the application for admission to the program. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper

application must pay by personal check drawn on a U.S. bank, by cashier's check, or by money order made out to SIUC. Applications for admission to the program will be reviewed by the Program co-directors. Upon recommendation of the co-directors, the application will be forwarded to the Graduate School for approval.

Requirements

Foundation Courses

- Math 411-3 Mathematical Topics for Teachers (3 credits).
- Science 503A-3 Science for Elementary School Teachers (3 credits).
- CI 522-3 Integration of Technology into Science and Mathematics Teaching (3 credits).

Content Courses

- BIOL 500-3 Contemporary Biology for Teachers (3 credits).
- CHEM 506-3 Chemistry Topics for Teachers (3 credits).
- GEOL 585-3 Earth and Space Science for Teachers (3 credits).
- MATH 511-3 Advanced Topics in the Teaching of Mathematics (3 credits).
- PHYS 575-3 Special Physics Topics for Teachers (3 credits).

Educational, Pedagogical and Leadership Courses

- CI 593 (d) (for science) OR CI 593 (e) (for mathematics) Individual Research in Education (Action Research) (3 credits).
- CI 428-3 Science Methods and Curriculum Development for K-8 (3 credits).

- CI 530-3 Teaching Problem Solving in School Mathematics (Grades K-8) (3 credits).
- CI 537-3 Leadership in Mathematics and Science (3 credits).

Retention and Graduation

Students in the MSMSEd program are expected to complete the program in 2 academic years and 2 summer terms. Courses offered during the academic year are offered in a flexible on-line or distance-learning format. Laboratory or field experiences may require an additional commitment of 2-3 Saturdays each semester. Summer courses are offered at various SIUC service centers in Southern Illinois.

Approval for graduation requires completion of all require coursework and the Action Research project with a grade of C or better, and an overall GPA in the program of 3.0 or better.

MECHANICAL ENGINEERING

<http://www.me.engr.siu.edu/>
meep@engr.siu.edu

COLLEGE OF ENGINEERING

Graduate Faculty:

Abrate, Serge, Professor, Ph.D., Purdue University, 1983; 1995. Impact, penetration, structural dynamics, composites.

Agrawal, Om, Professor, Ph.D., University of Illinois-Chicago, 1984; 1985. Computer-aided analysis and design of rigid/flexible multibody systems, numerical analysis, finite element methods, and continuum mechanics, CAD/Simulation of mechanical systems.

Blackburn, James W., Professor, Ph.D., University of Tennessee, Knoxville, 1988; 1995. Biokinetics, biotechnology, chemical and bioprocesses reduction and control of organic wastes/by-products; pollution prevention through tuning complex chemical processes and bioprocesses, bioprocess treatment of waste and wastewater, scale-up and application of bioremediation processes, reduction or control of organic air emissions.

Chen, Juh W., Professor, *Emeritus*, Ph.D., University of Illinois, 1959; 1965.

Chu, Tsuchin P., Professor, Ph.D., University of South Carolina, 1982; 1990. CAD/ CAM, imaging systems, mechanical vibrations, computer graphics, machine vision, optical methods in experimental mechanics and manufacturing, image processing.

Don, Jarlen, Associate Professor, Ph.D., Ohio State University, 1982; 1985. Materials creep and creep fatigue, surface phenomena, carbon-carbon composites, composite materials, friction materials.

Esmaeli, Asghar, Assistant Professor, Ph. D., University of Michigan, 1995; 2000. CFD, two-phase heat transfer.

Farhang, Kambiz, Professor, Ph.D., Purdue University, 1989; 1990. CAD/CAM, controls, vibrations, kinematics, dynamics, control and stability of flexible and rigid-body mechanical, electromechanical, mechanical-drive systems; manufacturing processes and process control.

Filip, Peter, Professor, Ph.D., Technical University Ostrava, Czech Republic, 1989; 2004. Friction materials, biomaterials.

Helmer, Wayne A., Professor, *Emeritus*, Ph.D., Purdue University, 1974; 1974.

Hippo, Edwin J., Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1977; 1984.

Jefferson, Thomas B., Professor, *Emeritus*, Ph.D., Purdue University, 1955; 1969.

Kent, Albert C., Professor, *Emeritus*, Ph.D., Kansas State University, 1968; 1966.

Koc, Rasit, Professor and *Chair*, Ph.D., University of Missouri-Rolla, 1989; 1994. Ceramic materials, powder processing, nonstoichiometry of oxides; sintering of oxide and non-oxide ceramics, methods preparing high purity oxides from organo-metallics, perovskites for use as high temperature electrodes, synthesizing submicron carbide, nitride and boride powders.

Mahajan, Ajay, Professor, Ph.D., Tulane University, 1994; 1998. Robotics, controls, intelligent sensors, autonomous systems, machine learning, navigation of mobile robots, ultrasonic 3D position estimation systems, mechatronics and virtual reality.

Mathias, James A., Assistant Professor, Ph.D., Ohio State University, 2001; 2003. Nanotechnology, microchannels, heat transfer, thermodynamics, energy utilization.

Mondal, Kanchan, Assistant Professor, Ph.D., SIUC, 2001; 2006. Electrochemistry, energy from coal, catalysis, reactor systems and design.

Muchmore, Charles B., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1969; 1966.

Nsofor, Emmanuel C., Associate Professor, Ph.D., Mississippi State University, 1993; 1999. Experimental and computational flow and heat transfer, advanced energy systems, HVAC & R, energy storage, environmental engineering, thermodynamics and combustion.

O'Brien, William S., Associate Professor, *Emeritus*, Ph.D., West Virginia University, 1972; 1973.

Orthwein, William C., Professor, *Emeritus*, Ph.D., University of Michigan, 1958; 1965.

Rajan, Suryanarayanaiah, Professor, *Emeritus*, Ph.D., University of Illinois, 1970; 1977.

Swisher, George M., Professor, *Emeritus*, Ph.D., Ohio State University, 1969; 1999.

Swisher, James H., *Emeritus*, Professor, Ph.D., Carnegie-Mellon, 1963; 1983.

Szary, Marek L., Associate Professor, Ph.D., Technical University of Wroclaw, Poland, 1977; 1985. Acoustics, sound propagation and control, vibroacoustics and vibration, experimental methods, simulation and modeling, fluidic control system. Adding sound and vibration control using smart materials.

Tempelmeyer, Kenneth E., Professor, *Emeritus*, Ph.D., University of Tennessee, 1969; 1979.

Weston, Alan J., Associate Professor, Ph. D., Southern Illinois University, 1991; 1986. Electrodeposition and doping of laser semiconductors, pedagogical uses of commercial game engines for engineering 3D visualization, electrochemical STM patterning of organic masks for UV VLSI applications.

Wiltowski, Tomasz, Professor, Ph.D., Institute of Catalysis and Surface Chemistry, Cracow, Poland, 1982; 2003. Coal transformation and characterization, coal gasification, alternative energy sources, hydrogen production from coal, catalytic conversion of hydrocarbons and alcohols to hydrogen, fuel cells, nanomaterials synthesis and characterization.

Wittmer, Dale E., Professor, Ph.D., University of Illinois, 1980; 1986. Continuous sintering and advanced materials processing, high temperature resistant materials and testing, ceramics whisker synthesis, ceramic composites, carbon fiber production and composites.

Wright, Maurice, Professor, *Emeritus*, Ph.D., University of Wales, United Kingdom, 1962; 1984.

Master of Science in Mechanical Engineering

Graduate work leading to the Master of Science degree in mechanical engineering is offered by the College of Engineering. The program is designed to provide advanced study in air pollution control, mass and heat transfer, coal conversion, electrochemical processes, thermal science, thermal systems design, solar systems design, chemical and biochemical processes, mechanical systems, computer-aided design, composite materials and ceramics and tribology.

Admission

Students seeking admission to the graduate program in mechanical engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Mechanical Engineering. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. The application form can be obtained from the Department.

Accelerated Master's Program

Mechanical Engineering students with senior standing and a GPA of 3.5 will be permitted to take up to six hours of graduate credit in Fall and Spring semesters. Outstanding junior students will be allowed to take one course for graduate credit. By doing so, students then pursuing their MSME degrees after completing their BSME degrees will have these graduate credits transferred toward their MSME degree so that they may be able to finish the degree requirements in a year or so. Students must complete a no fee Graduate School application and submit it to the department chair for approval. Students will be allowed to complete up to 12 hours of graduate credit before receiving their BSME.

Requirements

Each student majoring in mechanical engineering will develop a program of study with a graduate adviser and establish a graduate committee of at least three members at the earliest possible date. A student may with the approval of a graduate faculty committee and the department chair also take courses

in other branches of engineering, or in areas of science and business, such as physics, geology, chemistry, mathematics, life science, administrative sciences, or computer science. A thesis committee of at least three members will approve the thesis and the comprehensive oral exam.

For a student who wishes to complete the requirements of the master's degree with a thesis, a minimum of thirty semester hours of acceptable graduate credit is required. Of this total, eighteen semester hours must be earned in the Department of Mechanical Engineering and Energy Processes. A minimum of 15 hours of coursework at the 500-level (excluding thesis) is required. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work including thesis.

If a student prefers the non-thesis option, a minimum of thirty-six semester hours of acceptable graduate credit is required. The student is expected to take at least twenty-one semester hours within the Department of Mechanical Engineering and Energy Processes including no more than three semester hours of the appropriate 592 course to be devoted to the preparation of a research paper. A minimum of 15 hours of coursework at the 500-level (excluding thesis) is required. In addition, each candidate is required to pass a written comprehensive examination. An oral presentation of the paper may be required.

Each non-thesis student will select a minimum of three engineering graduate faculty members to serve as a graduate committee, subject to the approval of the chair of the department. The committee must include at least one member from one of the other engineering departments and will:

1. approve the student's program of study,
2. approve the student's research paper topic,
3. approve the completed research paper, and
4. administer and approve the written comprehensive examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Mechanical Engineering and Energy Processes.

Courses (ME)

Graduate work in the Department of Mechanical Engineering and Energy Processes is offered toward a concentration for the Master of Science degree in engineering. Safety glasses are required for some of the courses in this department. Four-hundred level courses in this department may be taken for graduate credit unless otherwise indicated in the course description.

400-3 Engineering Thermodynamics II. Combined first and second law analysis; Exergy analysis; Analysis of power and refrigeration cycles. Detailed treatment of gas and vapor cycles including gas and steam cycles; Thermodynamics of combustion and reaction of mixtures; Introduction to thermodynamic property relations, chemical and phase equilibrium. Prerequisite: Engineering 300.

401-1 Thermal Measurements Laboratory. Study of basic measurements used in the thermal sciences. Calibration techniques for temperature and pressure sensors. Thermal measurements under transient and steady-state conditions. Applications include conduction, convection and radiation experiments. Uncertainty analysis. The handling and reduction of data. Prerequisite: 302.

405-3 Internal Combustion Engines and Gas Turbines. Operation and performance characteristics of Otto, Diesel, Wankel engines and gas turbines. Methods of engine testing, types of fuels and their characteristics, fuel metering systems, engine combustion analysis as related to engine performance, fuel characteristics and air pollution, exhaust gas analysis and air pollution control. Prerequisite: Engineering 300.

406-3 Thermal Systems Design. Applications of the principles of engineering analysis to the design of thermal systems. Coordination of such systems as heat exchangers, air conditioners, cogeneration cooling towers, and furnaces. Emphasis is placed on application of basic principles of heat transfer and fluid mechanics. Prerequisite: ME 302

408-3 Energy Conversion Systems. Principles of advanced energy conversion systems; nuclear power plants, combined cycles, magnetohydrodynamics, cogeneration (electricity and process steam) and heat pumps. Constraints on design and use of energy conversion systems; energy resources, environmental effects and economics. Prerequisite: 301 or 400.

410-3 Applied Chemical Thermodynamics and Kinetics. Designed for students interested in chemical and environmental processes and materials science. Topics covered include applications of the Second and Third Laws of Thermodynamics, solution theory, phase equilibria, sources and uses of thermodynamic data, classical reaction rate theory, kinetic mechanisms and the determination of rate-determining steps in chemical reactions. Prerequisite: Chemistry 200, 201, Engineering 300 or consent of instructor.

415-3 Engineering Acoustics. Principles of engineering acoustics and their applications to passive and active noise control techniques. Laboratory experience demonstrates techniques for control and reduction of noise.

416-3 Air Pollution Control. Engineering control theory, procedure, equipment, and economics related to control of particulate, gaseous, and toxic air emissions. The environmental impacts due both to controlling and not controlling emissions are considered. Understanding of the basics is evaluated as students design control equipment, specify and troubleshoot control systems and predict the impacts for each major type of control system. Prerequisite: senior standing.

421-3 Pneumatic Hydraulic Engineering. Design principles of fluid power engineering. The behavior of fluids in a system. Analysis and design of hydraulic and pneumatics machinery and systems using fluid as a medium for transmission of power and control of motion. Analysis of steady state and dynamic behavior. Critical operations and analysis.

422-3 Applied Fluid Mechanics for Mechanical Engineers. Applications of fluid mechanics in internal and external flows. The mathematical basis for inviscid and viscous flows calculations is developed with application to pipe and duct flows; external flow about bodies; drag determination; turbomachinery; and reaction propulsion systems. Semester design project of a fluid mechanical system. Prerequisite: Engineering 300, Civil Engineering 370a and Mathematics 305.

423-3 Compressible Flows. Foundation of high speed fluid mechanics and thermodynamics. One-dimensional flow, isentropic flow, shock waves and nozzle and diffuser flows. Flow in ducts with friction and heat transfer. Prandtl-Meyer flow. Compressibility effects in reaction propulsion systems. Semester design project. Prerequisite: Engineering 300, Civil Engineering 370a.

435-3 Design of Mass Transfer Processes. Design principles of mass transfer processes. The rate mechanism of molecular, convective and interphase mass diffusion. The design of selected industrial mass transport process operations such as absorption, humidification, water cooling, drying and distillation. Prerequisite: 302.

436-3 Mechanical Engineering Controls. Analysis and design of controls for mechanical engineering systems: mechanical, electrical, thermal, fluid and combinations of these. Prerequisite: 261, Engineering 300, 335, 351.

440-3 Heating, Ventilating and Air Conditioning Systems Design. Principles of human thermal comfort. Heating and cooling load analysis. HVAC system design. Air conditioning processes. Prerequisite: 302.

446-3 Energy Management. Fundamentals and various levels of analysis for energy management of commercial buildings and industrial processes and buildings. Use of energy management systems and economic evaluations are required in course projects. Prerequisite: 302.

449-3 Mechanics of Advanced Materials. Mechanical behavior of composite materials, cellular materials, functionally graded materials. Constitutive equations for linear and nonlinear ranges, failure theories, fracture mechanics. Application to the design of composite and sandwich

structures, pressure vessels, shafts, armor under static loading, impact, and blast loading. Prerequisite: ME 261, CE 350.

463-3 Introduction to Ceramics. Structure and physical properties, mechanical properties, processing and design of ceramics. Prerequisite: Engineering 312 or equivalent.

465-3 Introduction to Nanotechnology. Survey of the rapidly developing fields of nanometer science and engineering. Impact on society; principles of self-assembly; production and properties of nano-materials; cell mechanism as a model for assemblers; nano-tools; and nano-systems are explored. Prerequisite: Chemistry 210.

468-3 Friction Science and Applications. Study of systems and materials used for friction applications with a focus on aerospace and ground transportation vehicles. Course covers theories and experimental methods regarding friction and wear, contact mechanics, friction materials vibration and noise, thermal transport and thermo-elastic phenomena. The course approach uses a materials emphasis. Lectures are complemented by exposure to laboratory methods and equipment. Design of a friction component, system or testing device. Prerequisite: Engineering 312 and senior standing or consent of instructor.

470-3 Mechanical System Vibrations. Linear vibration analysis of mechanical systems. Design of mechanical systems to include effects of vibration. Prerequisite: 261, Engineering 351, Mathematics 305.

472-3 Materials Selection for Design. Interaction of material design process with material selection criteria. Comparison of materials properties, processes and fabrication. Project work includes design models, material selection rationale, oral presentation of projects, construction of mock-up models, and theoretical design problems in the area of the student's specialization. Prerequisite: Engineering 222b, 312.

475-3 Machine Design I. Design of machines using bearings, belts, clutches, chains and brakes. Develops application of the theory of fatigue, power transmission and lubrication to the analysis and design of machine elements. Prerequisite: Engineering 351 and Civil Engineering 350a.

477-3 Fundamentals of Computer-Aided Design and Manufacturing. Introduction to the concepts of computer-aided design and manufacturing (CAD/CAM). Subjects include computer graphics, geometric modeling, engineering analysis with FEM, design optimization, computer numerical controls, project planning and computer integrated manufacturing. (CIM). Students are required to use computer packages for projects. Prerequisite: 475 or consent of instructor.

478-3 Finite Element Analysis in CAD. Course to cover a multitude of topics in CAD/CAE with emphasis on finite element modeling and analysis. Overview of CAD/CAM/CAE; FEA software; FEA problems including trusses, beams, frames, thermal analysis, and fluid mechanics; design optimization; rapid prototyping. Students are required to use FEA software for homework assignments and a design

project. Prerequisite: ME 302 and 475 or consent of instructor.

480-3 Computational Fluid Dynamics. Application of computational fluid dynamics techniques to the solution of problems in engineering heat transfer and fluid flow. Discretization techniques; stability analysis. Introduction to grid generation. Prerequisite: Engineering 351, Civil and Environmental Engineering 370, Mechanical Engineering 302 or consent of instructor.

500-3 Advanced Engineering Thermodynamics. Principles of kinetic theory and classical statistical mechanics applied to thermodynamic systems. Statistical interpretation of the equilibrium state and thermodynamic properties of engineering systems. Introduction to irreversible thermodynamics with engineering examples. Prerequisite: Engineering 300.

501-3 Transport Phenomena. Mechanism of heat, mass and momentum transport on both molecular and continuum basis. Estimation of transport properties. Generalized transport equations in one- or three-dimensional systems. Analogy of mass, heat and momentum transfer. Macroscopic balances, simultaneous mass and heat transfer. Prerequisite: 302.

502-3 Conduction Heat Transfer. Engineering considerations involving the construction of mathematical and numerical models of conduction heat transfer and the interpretation of results of analyses. Prerequisite: 302.

503-3 Convective Heat Transfer. Laminar and turbulent forced convection heat transfer over surfaces and inside tubes, including non-circular cross sections. Developing flows. Laminar free convection. Emphasis throughout is on the analytical approach. Prerequisite: 302.

504-3 X-Ray Diffraction and Electron Microscopy. (Same as Physics 571.) X-ray physics. Geometry of crystals. Scattering of X-ray by atoms, crystals and noncrystalline matter. Kinematical theory of diffraction. Powder method, Laue method. Electron optics. Formation and analysis of diffraction patterns. Imaging techniques. Image contrast theories. Analysis of crystal defects. Advanced analytical electron microscopes.

505-3 Vehicle Dynamics. To provide an introductory coverage of dynamics of vehicle systems. The topics include mainly automotive systems but others such as aircraft and train systems may be discussed. Students will become familiar with issues related to tire behavior, vehicle suspension design, steering, vehicle and load transfer.

507-3 Combustion Phenomena. Basic combustion phenomena-chemical rate processes-flame temperature, burning velocity, ignition energy, quenching distance and inflammability limits-laminar and turbulent flame propagation-aerodynamics of flame-gaseous detonations-two phase combustion phenomena-fluidized bed combustion. Prerequisite: Engineering 300.

508-3 Nano/Microscale Energy and Heat Transfer. Review of limitations of macroscopic energy transport models; Energy transport and conversion mechanisms at the micro/nano/molecular scale; Energy transfer in

nanostructured energy devices; Related topics on the transport of electrons, phonons and molecules; Molecular Dynamics solution. Prerequisite: Graduate standing or consent of department.

509-3 Thermal Radiation Heat Transfer. Review of radiation fundamentals. Prediction of radiative properties using classical electromagnetic theory. Properties of real materials. Governing equations between blackbody and graybody surfaces. Exchange of radiation between nondiffuse, nongray surfaces. Radiation in the presence of other energy transfer modes. Approximate and computer solution techniques. Prerequisite: 302.

525-3 Small Particle Phenomena. Small particle formation, behavior, properties, emission, collection, analysis and sampling. Includes atomization, combustion, transport of suspension and sols, filtration, light scattering and movement patterns of mono and polydisperse particles and use of a device to measure size, size distribution and one other physical property of an aerosol. Prerequisite: graduate standing.

531-3 Reaction Engineering and Rate Processes. Chemical kinetics of homogeneous and heterogeneous reactions, kinetic theories, mechanism and mathematical modeling. Reactor design. Design of multiple reactions; temperature and pressure effects. Nonisothermal and nonadiabatic processes. Non-ideal reactors. Prerequisite: 435.

535-3 Computer Aided Analysis of Mechanical Systems I. Computer aided kinematic and dynamic analysis of planar mechanism: topics will include formulation of kinematic and dynamic equations of motion for planar systems. Automatic generations of kinematic constraint such as revolute joint, translation joint, etc. Numerical techniques for solution of nonlinear, differential, and algebraic equations, application of these techniques to planar mechanism and robotic systems. Prerequisite: 309.

537-3 Nonlinear Vibrations. Dynamic response and stability of nonlinear systems. Examples and sources of nonlinearity. Various techniques for studying dynamic behavior or nonlinear systems. Prerequisite: 470 or consent of instructor.

538-3 Applied Optimal Design and Control of Dynamic Systems. Unconstrained and Constrained Mechanical-System Optimization Problems; Variational Calculus; Continuous Optimal Control; The Maximum Principle and Hamilton-Jacobi Theory; Dynamic-Systems Optimum-Control Examples; Design Sensitivity Analysis; Numerical Methods for Dynamic-System Design and Control Problems; Application of the above techniques to Large Scale Dynamic Systems. Prerequisite: 470 or equivalent.

539-3 Catalysis in Energy Processes. This course spans the full range from fundamentals of kinetics and heterogeneous catalysis via modern experimental and theoretical results of model studies to their equivalent large-scale energy processes. Several processes are discussed including hydrogen production, fuel cells, liquid fuel synthesis. Prerequisite: ME 410 or consent of instructor.

540-3 Introduction to Continuum Mechanics. Tensor analysis applied to continuum mechanics: stress and strain and their invariance, equations of compatibility, constitutive equations - including linear stress-strain relations. Prerequisite: Civil and Environmental Engineering 350a, Mathematics 305, graduate standing in engineering.

545-3 Intelligent Control. Techniques to design and develop intelligent controllers for complex engineering systems. Specific techniques covered are fuzzy logic, expert systems, genetic algorithms, simulated annealing and any combinations of these. Prerequisite: 436 or consent of instructor.

549-3 Wave Propagation, Impact and Explosions. This course will deal with the dynamic response of materials and structures to dynamic events with particular emphasis on crashes, impacts and explosions.

550-3 Contact Mechanics. Course covers fundamentals of mechanics of elastic and inelastic solids in contact. Although the primary focus is on elastic contact, topics involving plastic flow, thermo-elastic effects and contact of rough surfaces are included in the content.

555-3 Materials Processing. Course to cover a multitude of topics in the processing of metals, ceramics and, to a lesser extent, polymers. Example are: materials beneficiation, extraction, solidification, sintering and thin film deposition; topics for which the scientific basis for the processes is well established. Prerequisite: 410 and Engineering 312 or consent of instructor.

562-3 Environmental Degradation of Materials. Course designed for majors in engineering and the physical sciences. Topics covered include general corrosion, oxidation, hydrogen embrittlement, stress corrosion cracking and fine particle erosion. Approach will draw on principles of chemistry and materials science. Prerequisite: Chemistry 200 and 210, Engineering 312, or consent of instructor.

564-3 Ceramic Materials for Electronics. Ceramic materials contribute essential passive functions as components for a wide range of electronic applications related to sensors and energy converters. Ceramic material's electronic properties, electronic and ionic conduction in ceramic oxides; processing, properties and applications of ceramic materials for electronics, solid-oxide fuel cells, properties, fabrication and performance will be covered in this course. Prerequisite: Engineering 312, Mechanical Engineering 463 or consent of instructor.

565-3 Finite Element Analysis. (Same as Civil and Environmental Engineering 551). Finite element analysis as a stress analysis or structural analysis tool. Derivation of element stiffness matrices by various means. Application to trusses, plane stress/strain and 3-D problems. Dynamic and material nonlinearity problems. Prerequisite: Civil and Environmental Engineering 350, Engineering 222a or b, and Mathematics 305.

566-3 Advanced Mechanics of Materials. (Same as Civil and Environmental Engineering 557) Advanced topics in mechanics of materials including: elasticity equations; torsion

of non-circular sections; generalized bending including curved beams and elastic foundations; shear centers; failure criteria including yielding, fracture and fatigue; axisymmetric problems including both thick and thin walled bodies; contact stresses; and stress concentrations. Prerequisite: Civil and Environmental Engineering 350a, and Engineering 222.

567-3 Tribology. Analysis and design of tribological components particularly bearings. A number of modern developments in the field and advanced topics will be presented. Prerequisite: graduate standing or consent of instructor.

568-3 Alternative Energy and Fuel Resources, The course covers the alternatives for energy resources and the impact of the human growth on the energy usage and its environmental consequences. The course describes the fossil fuel era, renewable energy resources, and hydrogen fuel era. The fundamentals of each of these fuel types, their conversion to usable energy and the potential of each of these fuels for the future is discussed. Prerequisite: ENG 300 and ME 410, or instructor's consent.

569-3 Non-Destructive Evaluation, Course to cover a multitude of topics in non-destructive evaluation (NDE) techniques with emphasis on recent advancements in the field. Introduction to the field of NDE. Overview of common NDE techniques, such as visual inspection, eddy current, X-ray and ultrasonics. Recent development and research areas in NDE.

577 Bioprocess Engineering. This course introduces the Mechanical and/or the Biomedical Engineer to the applications of bioprocesses to biotechnology, bacterial cell cultivation, animal cell cultivation, plant cell cultivation, and medical applications bioprocessing. Attention will be given to a short survey of the working cells and reactors for cell growth, but will be an overview in nature.

580-1 to 2 Seminar. Presentations of topics in the broad areas of mechanical engineering such as thermal, mechanics, materials and acoustics. Prerequisite: enrollment in program leading to Master of Science of Mechanical Engineering.

582-1 Experimental Research Tools. Topics important to engineering graduate students engaging in research. These topics include: laboratory safety, statistical data analysis, experimental design, library research and chemical hygiene. Prerequisite: graduate enrollment in Engineering.

583-1 Technical Research Reporting. Analysis of technical and scientific writing: journal article, thesis, research paper. Guidelines and principles for writing engineering research literature and proposals. Term project involving thesis or research paper proposal to meet department requirements. Prerequisite: 582, consent of instructor.

592-1 to 4 Special Investigations in Engineering. Advanced topics in thermal and environmental engineering. Topics are selected by mutual agreement of the student and instructor. Four hours maximum course credit. Prerequisite: consent of instructor and department chair.

593-3 Special Topics in Mechanical Engineering. Studies of special topics in various areas in mechanical engineering.

Such topics as coal refining, energy conversion, thermal systems, mechanics, robotics, CAD/CAM, TOM and engineering materials. Prerequisite: consent of instructor.

595-3 Research Paper. Research paper on a topic approved by a faculty advisor and committee in Mechanical Engineering. This course is restricted to graduate students in the non-thesis option. Prerequisite: consent of instructor or department and graduate standing in Mechanical Engineering.

599-1 to 6 Thesis. Six hours maximum course credit.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MEDICAL DOSIMETRY

COLLEGE OF APPLIED SCIENCES AND ARTS

Graduate Faculty:

Collins, Kevin Scott, Associate Professor, M.S., Southern Illinois University Carbondale, 2001; 2000. Radiation therapy.

Collins, Sandra K., Assistant Professor, MBA, Southern Illinois University Carbondale, 2003; 2000. Health care management, access-to-care and shift in population demographics.

Jensen, Steve, Professor, Ph.D., Southern Illinois University Carbondale, 1987; 1980. Health occupations.

Matthews, Eric, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2008; 2003. Radiological sciences.

Other related dosimetry courses taught by medical physicists on contract.

TRACK 1

Mission: The mission of the Medical Dosimetry Program offered by Southern Illinois University Carbondale (SIUC) is to provide a quality program integrating education, research and service in order to meet the needs of the profession and improve health care of the people and communities we serve.

Program Goals

1. Prepare the student to practice as an entry level professional Medical Dosimetrist by offering a comprehensive curriculum and quality didactic/clinical instruction.
2. Provide didactic and clinical experiences that lead to research in educational, professional, or health care issues relating to medical dosimetry.
3. Provide avenues to students for professional development and growth within the profession.
4. Provide avenues for students to develop and apply skills in effective communication, analytical and critical thinking and problem-solving necessary for successful medical dosimetry practice.
5. Provide a clinical and didactic environment which leads to the development of clinical skills and competence appropriate to an entry level Medical Dosimetrist.

Program Description

The Medical Dosimetrist is a member of the Allied Health and Radiation Oncology Team.

Course material and practicum covers radiation physics, radiation protection, dose calculations, tumor localization, external beam treatment planning, brachytherapy, quality assurance, medical imaging/anatomy, clinical radiation oncology, and radiobiology. Clinical practicum includes external beam treatment planning, brachytherapy treatment, preparation and planning, chart reviews and dose calculations, record and verify system data entry, simulation (conventional and CT-simulation), treatment aid fabrication, treatment machine quality assurance, stereotactic treatment

planning, gamma knife, IMRT planning and treatment. Special project assignments, conference attendance,

written reports, chapter reviews, and labs are also part of the curriculum.

Accreditation

The Medical Dosimetry Program is fully accredited through the Joint Review Committee on Education in Radiologic Technology (JRCERT). The program at SIUC was the third accredited program in the United States. www.jrcert.org.

The program meets the formal education eligibility criteria for the national certification exam following graduation and six months of full-time employment, as required by the Medical Dosimetry Certification Board. www.mdcb.org.

General Description of a Medical Dosimetrist

The Certified Medical Dosimetrist (CMD) is a member of the radiation oncology (cancer treatment) team who has knowledge of the overall characteristics and clinical relevance of radiation oncology treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy (treatment with radioactive sources at a close distance) and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the Medical Physicist and Radiation Oncologist.

Major Duties

- Design a treatment plan by means of computer and/or manual computation that will deliver a prescribed radiation dose and field placement technique in accordance with the Radiation Oncologist's prescription to a defined tumor volume.
- Consider dose-limiting structures in the design of treatment plans and document dose in accordance with the Radiation Oncologist's prescription
- Coordinate treatment simulations and tumor localization on dedicated devices, including

Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET) when indicated, for radiation oncology treatment planning.

- Supervise, perform, or assist in the planning of the fabrication of compensation filters, custom shields, wedges, and other beam modifying devices.
- Supervise, perform, or assist in the planning of the production of moulds, casts, and other immobilization devices.
- Supervise therapy staff in the implementation of the treatment plan including: the correct use of immobilization devices, compensators, wedges, field arrangement, and other treatment variables.
- Perform calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, document all pertinent information in the patient record, and verify the mathematical accuracy of all calculations using a system established by the Medical Physicist.
- Provide physics and technical support to the Medical Physicist, in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment.
- Supervise, perform, or assist in the application of specific methods of dosimetry including ion chamber, TLD, or film measurement as directed by the Medical Physicist.
- Assist in intracavitary and interstitial brachytherapy procedures and in the subsequent manual and/or computer calculation of the dose distributions of these treatments.
- Teach applied aspects of medical dosimetry to students and residents, as assigned.
- Participate in clinical research for the development and implementation of new techniques.

- Participate in continuing education in the area of current treatment planning techniques, and advances in medical dosimetry.

Source: www.medicaldosimetry.org

Eligibility for the Master of Science Program in Medical Dosimetry Track 1

Preferred candidates are individuals who have a baccalaureate degree and have been trained as a radiation therapist.

Consideration is given to applicants with a bachelor's degree in the physical or biological sciences without radiation therapy experience.

Number of Students

Due to clinical hour requirements and the number of clinical sites, a maximum of 10 students per year will be allowed at this time. There will be approximately 3-4 internship sites for the St. Louis area students. Students outside the St. Louis area will rotate through 1-2 clinical sites.

Application

Applications should be received by February 1st of the year one plans to attend the program. Class selection will occur in February/March. Two separate applications are required: One for the program and one for the Graduate School.

For more information about admission policies, transfer credit, tuition and fees, refund policies, academic calendars, academic policies, graduation requirements, and student services please review "Degree Requirements, found in Chapter 1, of in the Graduate Catalog www.gradschool.siuc.edu/catalog.htm.

Class Location

The program offers education at various clinic sites and didactic education is delivered via distance learning. Live video conferencing equipment is used to allow students to interact with the instructors in real time.

Clinic Sites

Siteman Cancer Center
Barnes-Jewish Hospital
Mailstop 90-38-635, 4921 Parkview Place
St. Louis, Missouri 63110

Cancer Treatment Center, Memorial &
St. Elizabeth Health Care Services, LLP
4000 North Illinois
Belleville, Illinois 62226

SSM De Paul Health Center
12303 DePaul Drive
St. Louis, Missouri 63044-2588

Siteman Cancer Center
150 Entrance Way
St. Peters, Missouri 63376

St. Lukes Hospital
232 South Woodsmill Road
Chesterfield, Missouri 63017

Alexian Brothers Medical Center
820 Biesterfield
Elk Grove, Illinois 60007

St. Alexius
1555 Barrington Road
Hoffman Estates, IL 60169

St. Francis Hospital
6161 South Yale
Tulsa, Oklahoma 74136

The University of Kansas Hospital
Radiation Oncology, Bldg 58
3901 Rainbow Blvd
Kansas City, Kansas 66160

Alton Memorial Hospital
Cancer Care Center
6 Memorial Drive
Alton, Illinois 62002

Spectrum Health Hospitals
Lemmen-Holton Cancer Pavilion
145 Michigan NE

Grand Rapids, MI 49503
Decatur Memorial Hospital
2300 North Edward
Decatur, IL 62526

St. John's Hospital
800 East Carpenter Street
Springfield, IL 62769

Expenses

Tuition: \$12,000 for the calendar year.
Textbooks and Lab Coat: Approximately \$500 - \$600
Living Expenses: Students must find housing on their own.
This can vary greatly.

A Computer, Scanner, and High Speed Internet will be required. Computer and bandwidth specifications will be shared once accepted into the program.

Curriculum

The total curriculum consists of 30 semester hours. Program length is 52 weeks and the students attend classes/clinical for 40 hours per week.

Didactic component is approximately 300-350 hours. Clinical component is approximately 1650 - 1700 hours. The student will have approximately 2000 hours of education per year and have 80 hours of vacation.

Fall Semester

- RAD 510-2 Simulation and Cross Sectional Anatomy in Medical Dosimetry
- RAD 515-4 Medical Dosimetry Clinical I
- RAD 520-3 The Physics of Medical Dosimetry I
- RAD 525-3 Seminars in Medical Dosimetry I

Spring Semester

- RAD 530-2 The Essentials of Medical Dosimetry
- RAD 535-4 Medical Dosimetry Clinical II
- RAD 540-3 The Physics of Medical Dosimetry II
- RAD 545-3 Seminar in Medical Dosimetry II

Summer Semester

- RAD 550-2 Medical Dosimetry Clinical III
- RAD 560-2 Seminar in Medical Dosimetry III
- RAD 565-1 to 6 Independent Study

Program Director Contact Information:

Scott Collins, MS.Ed, R.T.(R)(T), CMD
Medical Dosimetry Program Director
School of Allied Health, MC 6615
College of Applied Sciences and Arts
Southern Illinois University Carbondale
Carbondale, Illinois 62901
Office: 618-453-8800
Fax: 618-453-7020

Disclaimer

Content of the program materials is subject to change without notice.

TRACK 2

Program Goals

1. Provide didactic experiences that lead to research in educational, professional, or health care issues relating to medical dosimetry.
2. Provide avenues to students for professional development and growth within the profession.
3. Provide avenues for students to develop and apply skills in effective communication, analytical and critical thinking and problem-solving necessary for successful medical dosimetry practice.
4. Provide a didactic environment which leads to the development managerial/educational skills appropriate to a Medical Dosimetrist.

Program Description

The Medical Dosimetrist is a member of the Allied Health and Radiation Oncology Team

Course material covers radiation physics, radiation protection, dose calculations, tumor localization, external beam treatment planning, brachytherapy, quality assurance, medical imaging/anatomy, clinical radiation oncology, and radiobiology. Special project assignments, journal article reports, and chapter reviews as well as management and education courses are also part of the curriculum.

Accreditation:

The Medical Dosimetry Program is approved by the Illinois Board of Higher Education (IBHE) and The Higher Learning Commission of the North Central Association of Colleges and Schools.

General Description of a Medical Dosimetrist

The Certified Medical Dosimetrist (CMD) is a member of the radiation oncology (cancer treatment) team who has knowledge of the overall characteristics and clinical relevance of radiation oncology treatment machines and equipment, is cognizant of procedures commonly used in brachytherapy (treatment with radioactive sources at a close distance) and has the education and expertise necessary to generate radiation dose distributions and dose calculations in collaboration with the Medical Physicist and Radiation Oncologist.

Major Duties

Design a treatment plan by means of computer and/or manual computation that will deliver a prescribed radiation dose and field placement technique in accordance with the Radiation Oncologist's prescription to a defined tumor volume.

Consider dose-limiting structures in the design of treatment plans and document dose in accordance with the Radiation Oncologist's prescription.

Coordinate treatment simulations and tumor localization on dedicated devices, including Computerized Tomography (CT), Magnetic Resonance Imaging (MRI), and Positron Emission Tomography (PET) when indicated, for radiation oncology treatment planning.

Supervise, perform, or assist in the planning of the fabrication of compensation filters, custom shields, wedges, and other beam modifying devices.

Supervise, perform, or assist in the planning of the production of moulds, casts, and other immobilization devices

Supervise therapy staff in the implementation of the treatment plan including: the correct use of immobilization devices, compensators, wedges, field arrangement, and other treatment variables.

Perform calculations for the accurate delivery of the Radiation Oncologist's prescribed dose, document all pertinent information in the patient record, and verify the mathematical accuracy of all calculations using a system established by the Medical Physicist.

Provide physics and technical support to the Medical Physicist, in radiation protection, qualitative machine calibrations, and quality assurance of the radiation oncology equipment.

Supervise, perform, or assist in the application of specific methods of dosimetry including ion chamber, TLD, or film measurement as directed by the Medical Physicist.

Assist in intracavitary and interstitial brachytherapy procedures and in the subsequent manual and/or computer calculation of the dose distributions of these treatments.

Teach applied aspects of medical dosimetry to students and residents, as assigned.

Participate in clinical research for the development and implementation of new techniques.

Participate in continuing education in the area of current treatment planning techniques, and advances in medical dosimetry

Source: www.medicaldosimetry.org

Eligibility for the Master of Science Program in Medical Dosimetry Track 2

Applicants must be a Certified Medical Dosimetrist and be current with the Medical Dosimetry Certification Board (MDCB). These individuals must also have a baccalaureate degree from an accredited university. The baccalaureate degree and academic performance must meet the entrance requirements set forth by the Graduate School at SIUC.

Individuals that have been approved by the MDCB to take their exam may apply to the program but CMD verification must be documented before any classes may be taken.

Number of Students

There is no limit to the number of students accepted for Track 2.

Application

Continuous enrollment is allowed for Track 2. This means you may start the program with any semester but applications must be received 6 weeks prior to starting. Two separate applications are required: One for the program and one for the Graduate School.

For more information about admission policies, transfer credit, tuition and fees, refund policies, academic calendars, academic policies, graduation requirements, and student services please review the Graduate Catalog at: www.gradschool.siuc.edu/catalog.htm.

Class Location

Track 2 is offered on campus and via distance learning.

Expenses

Tuition: \$400 per credit hour.

Textbooks: Approximately \$500 - \$600

Living Expenses: Students must find housing on their own. This can vary greatly.

A Computer, Scanner, and High Speed Internet will be required. Computer and bandwidth specifications will be shared once enrolled.

Curriculum

The total curriculum consists of 30 semester hours. Students may enroll full or part time for this program. For individuals employed full time, part time enrollment is recommended.

Fall Semester

- RAD 511-3 Fundamentals of Health Care Systems
 RAD 516-3 Cultural Foundations and Theories of Education
 RAD 520-3 The Physics of Medical Dosimetry I
 RAD 525-3 Seminars in Medical Dosimetry I

Spring Semester

- RAD 531-3 Human Resource Management in Health Care
 RAD 536-3 Introduction to Administration and Supervision in Allied Health
 RAD 540-3 The Physics of Medical Dosimetry II
 RAD 545-3 Seminar in Medical Dosimetry II

Courses (RAD)

510-2 Simulation and Cross Sectional Anatomy in Medical Dosimetry. This course covers the conventional and CT simulation techniques used in initiating radiation therapy for cancer patients. Identification of cross-sectional anatomy at different anatomical locations within the human body is also reviewed. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

511-3 Fundamentals of Health Care Systems. This course provides a multi-disciplinary analysis and is designed to provide students with information pertaining to the issues surrounding access to care, medical technology, and the complex financial structure of the health care system. Students will extensively examine aspects of the complex health care system such as managed care, Medicare, Medicaid, pharmaceuticals, health promotion and disease prevention, and the quality of care. Prerequisite: Consent of instructor.

515-4 Medical Dosimetry Clinical I. This is the first course of a three course sequence. During the three course sequence, students will complete eight clinical rotations. The length of these rotations varies from one to eleven weeks. During this course students will perform two to four of these rotations depending on the rotation schedule. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

516-3 Cultural Foundations and Theories of Education. Seminar provides an examination of the historical, social, economic and psychological foundations of allied health education with emphasis given to the nature and role of education and training in preparing for the field of medical education. The objectives of this seminar will allow the student to explore the nature and theories of education, the

Summer Semester

- RAD 551-3 Legal and Ethical Fundamentals of Health Care
 RAD 556-3 Individual Research in Medical Dosimetry
 RAD 565 1 to 6 Independent Study

Program Director Contact Information

Scott Collins, MS.Ed, R.T.(R)(T), CMD
 Medical Dosimetry Program Director
 School of Allied Health, MC 6615
 College of Applied Sciences and Arts
 Southern Illinois University Carbondale
 Carbondale, Illinois 62901
 Office: 618-453-8800
 Fax: 618-453-7020

Disclaimer

Content of the program materials is subject to change without notice.

behavioral aspects of education including the assumptions and practices which underlie education. Prerequisite: Consent of instructor.

520-3 The Physics of Medical Dosimetry I. This course covers the following topics: Radiologic Physics, production of x-rays, radiation treatment and simulation machines, interactions of ionizing radiation, radiation measurements, dose calculations, computerized treatment planning, dose calculation algorithms, electron beam characteristics, and brachytherapy physics and procedures. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

525-3 Seminars in Medical Dosimetry I. This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is twenty weeks in length. Prerequisite: Admission to the Medical Dosimetry Program.

530-2 The Essentials of Medical Dosimetry. This course covers the various quality assurance procedures performed in a radiation oncology department. Also included are various statistics topics to educate the student in becoming a good consumer of medical research literature. Professional development, billing/coding, HIPAA, and professional service are also addressed. This course is twenty weeks in length. Prerequisite: A grade of "C" or better in RAD 510, 515, 520, and 525.

531-3 Human Resource Management in Health Care. This course examines/describes how human resource functions play a role in health care. It focuses on how each human resource function supports management initiatives.

This course scrutinizes how human resource functions such as employee selection, development, motivation, and appraisal can impact a health care organization's ongoing business continuity. It also examines the legal environment of human resources. Prerequisite: Consent of instructor.

535-4 Medical Dosimetry Clinical II. This is the second of a three course sequence. During the three course sequence, students will complete eight clinical rotations. The length of these rotations varies from one to eleven weeks. During this course, students will perform two to four of these rotations depending on the rotation schedule. This course is twenty weeks in length. Prerequisite: A grade of "C" or better in RAD 515.

536-3 Introduction to Administration and Supervision in Allied Health. This course provides students with an examination of nature, function, and techniques of administration and supervision in medical departments. This is accomplished through case analyses and practice simulations of human problems in the healthcare organization and application of findings of behavioral science research to healthcare problems. Emphasis will be placed on the development of the direction and leadership skills. Prerequisite: Consent of instructor.

540-3 The Physics of Medical Dosimetry II. This course covers the following topics: Imaging for radiation oncology, IMRT, stereotactic radiosurgery, special procedures, particle therapy, hyperthermia, and radiation safety. This course is twenty weeks in length. Prerequisite: A grade of "C" or better in RAD 520.

545-3 Seminar in Medical Dosimetry II. This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical-dosimetrist. This course is twenty weeks in length. Prerequisite: A grade of "C" or better in RAD 525.

550-2 Medical Dosimetry Clinical III. This is the third course of a three course sequence. During the three week course sequence, students will complete eight clinical rotations. The length of these rotations varies from one to ten weeks. During this course students will perform one to two of these rotations depending on the rotation schedule. This course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 535.

551-3 Legal and Ethical Fundamentals of Health Care. This course provides students with an analysis of the legal and ethical environment of the health care industry. Focused on the health care environment, the course examines the judicial process pertaining to torts contracts, antitrust, corporate compliance, and access to care, negligence, and professional liability. The nature of ethics in the multi-cultural health care environment is examined with an analysis of the moral issues in health care. Prerequisite: Consent of instructor.

555-2 The Physics of Medical Dosimetry III. This course covers the following topics: MU calculations, point dose

calculations and radiation biology. This course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 540.

556-3 Individual Research in Medical Dosimetry. This course requires students to complete a research project in the field of Medical Dosimetry. Each project will have a written paper as a final product and this paper will be submitted for publication in one of the professional journals within the field of Radiation Oncology. Prerequisite: Consent of instructor.

560-2 Seminar in Medical Dosimetry III. This course consists of various seminars/literature reviews associated with radiation oncology. Topics include treatment techniques for various cancers, technological advances in cancer treatment, cancer treatment trends, and the role of a medical dosimetrist. This course is ten weeks in length. Prerequisite: A grade of "C" or better in RAD 545.

565-1 to 6 Independent Study. Directed independent study in selected areas of medical dosimetry studies. Prerequisites: Consent of Program Director.

MINING ENGINEERING

<http://www.engr.siu.edu/mining>
mining@siu.edu

COLLEGE OF ENGINEERING

Graduate Faculty:

Chugh, Yoginder P., Professor, Ph.D., Pennsylvania State University, 1971; 1977. Coal combustion byproduct utilization and management, rock mechanics and ground control.

Harpalani, Satya, Professor and *Chair*, Ph.D., University of California, Berkeley, 1985; 2002. Mine ventilation, coal bed methane reservoir engineering, in situ mining, and carbon dioxide sequestration.

Mohanty, Manoj, Professor, Ph.D., Southern Illinois University Carbondale, 1997; 2000. Coal and mineral processing, experimental design and statistical analysis.

Paul, Bradley, Associate Professor, Ph.D., University of Utah, 1989; 1990. Underground mining systems and solution mining, minerals processing, hard rock and industrial minerals, geostatistics, mine environmental studies.

Sinha, Atmesh K., Professor, *Emeritus*, Ph.D., University of Sheffield, England, 1963; 1975

Spearing, A.J.S. (Sam), Associate Professor, Ph.D., Technical University of Silesia, 1993; 2007. Mine design, rock mechanics, backfill, strata control and risk assessment.

Master of Science in Mining Engineering

Graduate work leading to the Master of Science degree in mining engineering is offered by the College of Engineering. The program is designed to provide advanced study in areas such as rock mechanics and ground control, mine design, mineral and coal processing, surface and underground mining systems performance optimization, innovative mining systems, surface mine reclamation, in-situ mining, mine environment and ventilation, coal bed methane reservoir engineering, carbon dioxide sequestration, and coal combustion byproduct utilization and management.

Admission

Students seeking admission to the graduate program in mining engineering must meet the admission standards set by the Graduate School and have a bachelor's degree in engineering or its equivalent. A student whose undergraduate training is deficient may be required to take coursework without graduate credit.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Mining Engineering. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Requirements

A graduate student in mining engineering is required to develop a program of study with a graduate adviser and a graduate committee. Each student majoring in mining engineering may, with the approval of the graduate committee, also take courses in other branches of engineering or in areas of science and business.

For a student who wishes to complete the requirements of the master's degree with a thesis, a minimum of thirty

semester hours of acceptable graduate credit is required. Of this total, eighteen semester hours must be earned in the mining engineering department. Each candidate is also required to pass a comprehensive oral examination covering all of the student's graduate work including thesis.

If a student prefers the non-thesis option, a minimum of 36 semester hours of acceptable graduate credit is required. The student is expected to take at least 21 semester hours within mining engineering including no more than 3 semester hours of the appropriate 592 course to be devoted to the preparation of a research paper. In addition, each candidate is required to pass a written comprehensive examination and an oral examination on the research paper.

If a student with a mining engineering background pursues a master's degree with double major, he or she will be required to take a minimum of 18 credits with thesis option and 22 credits with non-thesis option in mining engineering and 60% of the total credit requirements of the other department. For a student without a background in the related fields such as minerals engineering, geological engineering etc., the minimum credit requirement in Mining Engineering but in the mining department will be 24 credits with thesis option and 28 credits with non-thesis option. Additional deficiency courses will be prescribed for students with a background in non-related fields.

Each student will select a minimum of three graduate faculty members to serve as a graduate committee, subject to the approval of the chair of the Department of MMRE. It is strongly suggested that at least one member is from another department within or outside the College of Engineering. The committee will:

1. approve the student's program of study,
2. approve the student's research topic,
3. approve the completed research paper or thesis, and

4. administer and approve the written, or oral, comprehensive examination.

Teaching or research assistantships and fellowships are available for qualified applicants. Additional information

about the program, courses, assistantships, and fellowships may be obtained from the College of Engineering or the Department of Mining and Mineral Resources Engineering.

Courses (MNGE)

401-1 Mining Environmental Impacts and Permits. Socio-economic impacts of mining industry. Analyzing the markets for coal and its products. Mining operations and related environmental impacts. Mining permits. Prerequisite: 400 or consent of instructor.

417-2 Applied Probability and Statistics for Engineers. Probability and statistics concepts, analysis of engineering experimental data. Fitting experimental data to distribution functions. Regression analysis. Quality control in production systems. Reliability in engineering processes. Stochastic simulation of engineering systems. Prerequisite: Mathematics 250 or consent of instructor.

420-4 Mineral and Coal Processing. Principles of processing minerals, aggregates and coal, including unit operations of comminution, classification, solid-solid separation, dewatering and tailings disposal. Laboratory investigations of the fundamental principles governing unit operations including size reduction, mineral liberation, classification mineral recovery and dewatering. Laboratory. Prerequisite: 270, Chemistry 200, Physics 205a, Mathematics 250, Civil Engineering 370 or concurrent enrollment., consent of instructor.

421-3 Mineral Processing Plant Design. Engineering design of unit operations used for minerals, aggregates and coal processing including crushing, grinding, industrial screening, classification, gravity separation, flotation and dewatering. Overall plant performance optimization and flow sheet design. Prerequisite: 417 or concurrent enrollment and 420, consent of instructor.

425-4 Mine Ventilation Systems Analysis and Design. Thermodynamic principles in mine ventilation. Study of the theories and practice of natural and forced mine ventilation. Fan and mine characteristics. Ventilation network analysis. Mine ventilation design and problem analysis. Laboratory. Prerequisite: 310, Civil Engineering 370, consent of instructor for graduate students and non-majors.

430-3 Economics of Mineral Resources. Economics of mineral resources. Investment decision making criteria; economic viability of mining projects, financing mining projects; sensitivity and risk analyses. Prerequisite: 400, Engineering 361, or consent of instructor.

431-4 Rock Mechanics: Principles and Design. Analysis of stress and strain, elementary elasticity, stress distribution around openings, engineering properties of rocks, artificial support and reinforcement, slope stability. Laboratory. Prerequisite: Civil Engineering 350, consent of instructor for graduate students and non-majors.

435-3 Application of Operations Research to Mining. Mine systems analysis, operations research and statistics

in decision making, production engineering, optimization, linear programming, simulation. Prerequisite: 270, knowledge of linear algebra, or consent of instructor.

450-3 Industrial Minerals. Mining, Processing and Utilization aspects of key industrial minerals with special emphasis on the aggregates industry. Prerequisite: 270 or consent of instructor.

455-3 Mine Environment, Health and Safety Engineering. Analysis of mine environmental impacts and their mitigation, safety problems and rules and regulations, hazards and accidents. Sealing and recovery of mines. Design of mine emergency plans, safety methods, and health hazard control plans. Acid mine drainage, minerals waste disposal environmental remediation. Prerequisite: 310, 315, consent of instructor. Mining industrial experience will be accepted lieu of prerequisites.

460-3 Senior Design. Projects in planning and design of surface and underground mining systems. Evaluate and design mining subsystems; integrate subsystems and procedures into a preliminary mine design; and optimize operations from exploration to closure. Two lectures and two two-hour laboratories per week. Prerequisite: 310, 315, 420, 425, 431, or consent of instructor.

475-3 Analysis and Design of Mine Excavations. Rock classification; design of shafts, slopes, tunnels and underground chambers; support requirements; design of slopes; design of underground mining systems from ground control point of view; design of impoundments. Prerequisite: 310, 315, and 431, consent of instructor for graduate students and non-majors.

511-3 Advanced Ground Control. Ground control in viscoelastic, plastic, and jointed rocks, artificial rock stabilization, in-situ stresses, minimizing structural damage due to subsidence, bumps and rock bursts. Prerequisite: 431 or consent of instructor.

519-2 Advanced Mine Environment and Pollution Control. Study of the design of coal dust control plan; methane control. Design of mine illumination system, noise control and water pollution control. Prerequisite: 410, 415.

521-3 Mineral Processing Design and Simulation. Mineral processing related unit process design, modeling and simulation of selected processes, complete plant flowsheet development and optimization of plant performance; modeling and simulation experience through multiple class projects. Prerequisite: 420, 421 or concurrent enrollment. Consent of instructor.

530-3 Mine Management Concepts of probability and statistics, analysis of engineering data, fitting data to distribution function. Modeling of engineering systems and

optimization using linear programming, project management principles and system simulation. Special approval needed.

535-3 Rock Fragmentation. Principles of rock fragmentation, cutting and drilling, mechanics of rock penetration, drillability indices, use of explosives in rock fragmentation, design of blasting patterns in surface and underground mines, prevention of airblast and noise due to blasting, chemical fragmentation. Prerequisite: 431 or consent of instructor.

540-3 Production Engineering in Coal Mines. Operations analyses of production cycles in surface and underground coal mining systems, mine planning and design using computer models, computer simulation, economic analysis of mining systems. Prerequisite: 435 or consent of instructor.

545-3 Tunnelling. Tunnelling through consolidated and unconsolidated geologic materials—cut and cover, drilling and blasting, and rapid excavation tunnelling techniques. Classification systems for geologic materials, hydrological investigations, tunnel linings—types, requirements and their design. Instrumentation. Prerequisite: 431 or equivalent, or consent of instructor.

550-3 Industrial Minerals. Processing of key industrial minerals including Kaolin Clay, Talc, Mica, Carbonates and Aggregates. Ultra fine grinding and surface property based separation processes. Mining and Utilization aspects. Prerequisite: 270, 420, 421 or consent of instructor.

580-1 to 2 Seminar. Collective and/or individual studies in coal extraction or utilization.

592-1 to 5 Special Investigations. Special studies of coal extraction or utilization problems.

599-1 to 6 Thesis.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MOLECULAR BIOLOGY, MICROBIOLOGY, AND BIOCHEMISTRY

COLLEGE OF SCIENCE/SCHOOL OF MEDICINE

<http://www.siu.edu/~mbmb/>

mbmb@siumed.edu

Graduate Faculty:

Achenbach, Laurie, Professor and *Associate Dean for Research and Graduate Studies*, College of Science, Ph.D., University of Illinois, Urbana-Champaign 1988; 1990. Molecular genetics of metabolic pathways involved in the bioremediation of environmental contaminants; bacterial diversity and evolution; molecular anaerobic microbiology.

Bartholomew, Blaine, Professor, Ph.D., University of California, Davis, 1988; 1991. Regulation of gene expression, chromatin structure and function, molecular mechanisms of cancer.

Bartke, Andrzej, Professor, Ph.D., (Springfield), University of Kansas, 1965; 1984. Reproductive endocrinology; role of prolactin and growth hormone in the control of hypothalamic, pituitary and testicular function; transgenic animals, seasonal breeding.

Bender, Kelly, Assistant Professor, Ph.D., Southern Illinois University, 2003; 2006. Metabolic regulation of bacteria involved in bioremediation; small non-coding regulatory RNAs.

Bhaumik, Sukesh R., Assistant Professor, Ph.D., Tate Institute of Fundamental Research (University of Bombay), 1997; 2003. Regulation of eukaryotic gene expression; transcription-coupled ubiquitination and DNA repair; NMR structural studies on proteins and nucleic acids.

Borgia, Peter, Professor, *Emeritus* Ph.D., (Springfield), University of Illinois, Urbana-Champaign, 1973; 1976.

Brewer, Gregory J., Professor, Ph.D., (Springfield), University of California, San Diego, 1972; 1980. Alzheimer's disease, neuron development and adhesion; neurobiology of synaptogenesis; 2-D and 3-D neuronal networks.

Cao, Deliang, Associate Professor, M.D., Ph.D., (Springfield), Institute of Molecular Biology (University of Hong Kong), 1996; 2005. Molecular oncology and experimental therapeutics, with focuses on 1) action mechanisms and modulations of anticancer therapeutic agents and 2) the role of aldo-ketoreductases in cancer development, progression and therapy.

Carpenter, David F., Associate Professor, Ph.D., (Springfield), University of New Hampshire, 1972; 2000. Diagnostics for emerging infectious diseases of public health significance.

Chakrabarty, Subhas, Professor and (Springfield), Ph.D., University of Manitoba, 1980; 2005. Molecular mechanisms underlying malignant progression; chemoprevention of cancer; cancer diagnostic and prognostic markers; cancer therapeutics.

Cho, KyuHong, Assistant Professor, Ph.D., University of Illinois, 2001; 2007. Regulation of virulence factors in *Streptococcus pyogenes*.

Clark, David P., Professor, Ph.D., University of Bristol, 1977; 1980. Genetics and regulation of anaerobic growth in *Escherichia coli*.

Cooper, Morris D., Professor and *Chair, Medical Microbiology, Immunology, & Cell Biology*, (Springfield), Ph.D., University of Georgia, 1971; 1973. Mucosal immune responses of the human fallopian tube to *Neisseria gonorrhoeae* and *Chlamydia trachomatis* infections. Topical microbicide activity against sexually transmitted disease pathogens.

Davie, Judy, Assistant Professor, Ph.D., University of California at Berkeley, 1998; 2006. Mechanisms of gene regulation; focusing on myogenin, a transcription factor that controls skeletal muscle development.

Elble, Randolph C., Assistant Professor (Springfield), Ph.D., Indiana University, 1986; 2005. tumor suppression mechanisms in breast cancer. Biology of CLCA family proteins. Gene regulation in differentiation and stress.

Fix, Douglas F., Associate Professor and *Chair, Microbiology*, Ph.D., Indiana University, 1983; 1987. Molecular mechanisms of mutagenesis in *Escherichia coli*.

Gershburg, Edward, Assistant Professor, Ph.D., (Springfield), Tel-Aviv University, 1999; 2007. Epstein-Barr virus (EBV)-encoded protein kinase in viral infection. EBV-PK regulation and enzymology and identification of its viral and cellular targets.

Gupta, Ramesh, Professor and *Chair, Biochemistry and Molecular Biology*, Ph.D., University of Illinois, 1981; 1984. Molecular biology of *Archaea*, transcription and RNA processing in extreme halophilic and hyperthermophilic microorganisms.

Haddock, John D., Associate Professor, Ph.D., Virginia Tech, 1990; 1995. Biodegradation, Biotechnology.

Halford, William, Associate Professor, Ph.D., (Springfield), Louisiana State University Medical Center, 1996; 2007. Using herpes simplex virus as a tool to understand how viral and host immune factors interact to produce life-long viral infections; devising effective cures for persistent viral infections.

Hardwicke, Peter M. D., Professor, Ph.D., Kings College, London, 1969, 1985. Regulation of calcium transport across membranes by calcium pumps and the sodium-calcium exchanger. Proteolipids, lipids, conjugated trienes and non-myelin sensory nerve antigens.

Huggenvik, Jodi I., Associate Professor; Ph.D., Washington State University, 1985; 1993. Molecular

biology of mammalian gene expression and structure/function analysis of tumor suppressor genes.

Kadyrov, Farid, Assistant Professor, Ph.D., Russian Academy of Sciences, 1997; 2008. DNA replication and repair, DNA damage in cancer.

Khardori, Nancy, Professor, M.D., Ph.D., (Springfield), Government Medical College, India, 1972, All India Institute of Med. Sci., 1977; 1989. Microbial adherence and biofilms—study of the microbial adherence to prosthetic devices, factors facilitating and inhibiting adherence to devices.

Lightfoot, David A., Professor, Ph.D., University of Leeds, 1984; 1991. Molecular biotechnology and genomics.

Madigan, Michael T., Professor and Distinguished Scholar, Ph.D., University of Wisconsin, 1976; 1979. General microbiology; bacterial diversity, phototrophic bacteria; microbiology of extreme environments; nitrogen fixation.

Martinko, John M., Associate Professor and Distinguished Teacher, *Emeritus*, Ph.D., SUNY (Buffalo), 1978; 1981.

McAsey, Mary, Assistant Professor, Ph.D., (Springfield), University of Arizona, 1994; 1996. Mechanisms of action of estrogen, progesterone and apolipoprotein e in the brain; induction of apoptotic cell death by vitamin e succinate in ovarian and cervical cancer; role of placental hormones in diseases of pregnancy.

Mo, Yin-Yuan, Associate Professor, Ph.D., (Springfield), Washington State University, 1991, 2003. Tumor drug resistance and tumor cell biology.

Myers, Walter L., Professor, *Emeritus*, Ph.D., (Springfield), University of Wisconsin, 1962; 1973.

Nie, Daotai, Associate Professor, Ph.D., (Springfield), University of South Carolina, 1997; 2005. Molecular and cellular biology of cancer; tumor metastasis; development of tumor therapeutics.

Niederhoffer, Eric C., Associate Professor, Ph.D., Texas A&M University, 1983; 1990. Metallobiochemistry; electron transfer; metalloprotein structure-function, microbial stress responses-virulence factors.

Parker, Jack, Professor, *Emeritus*, Ph.D., Purdue University, 1973; 1977.

Ran, Sophia, Associate Professor, Ph.D. (Springfield), Weizmann Institute of Science, 1989; 2003. Tumor physiology, angiogenesis and lymphangiogenesis; breast cancer metastasis.

Rao, Krishna, Assistant Professor, Ph.D., M.D., (Springfield), University of Washington, 2—2; University of Miami, 1991; 2007. Mammary spindle cell carcinoma, treatment of head and neck cancer.

Rusch, Antje, Assistant Professor, Ph.D., University of Bremen, Germany, 2000; 2009. Microbial ecology, marine microbiology, biogeochemistry.

Schmit, Joseph C., Associate Professor and *Emeritus*, Ph.D., Purdue University, 1971; 1976.

Tischkau, Shelly A., Assistant Professor, Ph.D., University of Illinois, Urbana-Champaign, 1995; 2007. Neuroendocrinology; environmental toxicology; regulation of molecular circadian rhythms in health and disease states, including cancer and diabetes.

Torry, Donald E., Professor, Ph.D., (Springfield), Southern Illinois University, 1989; 2000. Human reproductive biology; cellular biology of angiogenic growth factors and immune cytokines during pregnancy. Molecular biology of placental gene expression.

Watabe, Kounosuke, Professor and *Director*, *MBMB*, Ph.D., (Springfield) Kyoto University, Japan, 1981; 1985. Molecular and cellular biology of tumor metastasis and dormancy; roles of tumor microenvironment in metastatic genes in cancer stem cells.

Weilbaecher, Rodney, Assistant Professor, Ph.D., University of California, Berkeley, 1997; 2007. Gene regulation, post-translational modifications, telomere biology.

Wilber, Andrew, Assistant Professor, Ph.D., (Springfield) University of Minnesota, 2006; 2006. Gene therapy for hemoglobin disorders betathalassemia and sickle cell anemia, gene expression regulation, stable gene delivery using non-viral and viral integrating vector systems and cancer immunotherapy.

Graduate programs are offered that lead to the Doctor of Philosophy (Ph.D.) and Master of Science (M.S.) in Molecular Biology, Microbiology and Biochemistry. The M.S. degree has thesis and non-thesis options. The non-thesis option M.S. degree has an area of specialization in Public Health Laboratory Sciences. These interdisciplinary programs draw their faculty primarily from the Department of Microbiology (College of Science) and the Department of Biochemistry and Molecular Biology (School of Medicine) on the Carbondale campus, and the Department of Medical Microbiology, Immunology, and Cell Biology (School of Medicine) on the Springfield campus. Adjunct faculty from the Illinois Department of Public Health (IDPH) Division of

Laboratories provide training to students in the public health laboratory setting. The programs are designed to offer advanced training (via lecture, discussion and laboratory) in biochemistry, biophysics, bacteriology, genetics, immunology, microbial physiology, virology, mycology, molecular biology, cell biology, developmental biology, structural biology and public health laboratory science. The Ph.D. and thesis option M.S. programs require laboratory research. The non-thesis option M.S. degree program is designed to prepare students for a career in public health laboratory science and requires substantial training in a public health laboratory setting that is directly relevant to career preparation in that area.

Admission

Prospective graduate students should have an undergraduate degree in any of the biological, chemical or physical sciences. The applicants are recommended to have completed courses in biology, organic chemistry, physics and mathematics. Strong candidates with

deficiencies in any area may be admitted, but such deficiencies may restrict the research areas available to the student and may lead to requirements for additional courses during graduate study. An advisory system in the program (see below) will help students in planning their course of study. Prospective students for the thesis option M.S. and Ph.D. degrees are encouraged to contact program faculty in areas of their research interest. Prospective students seeking admission to the non-thesis option M.S. degree program with an area of concentration in public health laboratory science are encouraged to contact the Chair of the Public Health Science Program committee.

Students may be admitted to the doctoral program with a bachelor's or master's degree. Students in the thesis option M.S. program can be admitted to the doctoral program via accelerated entry or the master's equivalency option by the recommendation of the faculty and approval of the Graduate School.

All application materials should be submitted to the Program Director. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Molecular Biology, Microbiology and Biochemistry. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. Applications for admission to the thesis option M.S. and Ph.D. programs are evaluated by the M.S./Ph.D. Program Admissions Committee and applications for the non-thesis option M.S. degree program with an area of concentration in public health laboratory science are evaluated by the Public Health Science Program Committee. Upon recommendation of the appropriate committee, the application is transmitted to the Graduate School for approval.

The MBMB program requires a grade point average (GPA) of 2.7 ($A = 4.0$) for admission into the M.S. programs and a GPA of 3.25 in graduate level work for admission into the doctoral program. An excellent record in undergraduate coursework and a strong recommendation of the thesis option M.S./Ph.D. Program Admissions Committee is required for direct admission to the doctoral program after a bachelor's degree.

Applicants are required to submit Graduate Record Examination (GRE) general test scores. Submission of test scores of the GRE advanced (biochemistry, cell and

molecular biology or biology or chemistry) examinations is also encouraged.

International students whose native language is not English will be required to obtain at least 550 (paper score) or 220 (computer score) on the Test of English as a Foreign Language (TOEFL) or 6 on the International English Language Testing System (IELTS).

Financial Assistance

Fellowships and assistantships are available through the program and the participating departments for qualified applicants.

Advisement and General Requirements

For thesis option M.S. and Ph.D. students, the Program Director or the Departmental Graduate Advisors as designates will assist each incoming student with the initial planning of a program of study and will advise the student until a Research Director is chosen. For non-thesis option M.S. degree program students, the Public Health Science Program Committee or its Chair will assist students in the planning of a program of study.

Research Director and Graduate Committee Selection. Each student in the Ph.D. or thesis option M.S. program should select a Research Director as soon as possible during the first year. The graduate committee for thesis option M.S. students shall consist of the Research Director (chair), and two additional graduate faculty members. The graduate committee for Ph.D. students shall consist of at least five graduate faculty members to include the Research Director (committee chair), three members derived from participating departments and one member from outside the Program. The Program Director, if not otherwise appointed, is an ex-officio (non-voting) member of every graduate committee. Students in the non-thesis option M.S. degree program with an area of concentration in public health laboratory science program need not choose a Research Director or a Graduate Committee and the Public Health Science Program Committee will plan and monitor student progress through the non-thesis option M.S. program.

Graduate Committee Functions (thesis option M.S. and Ph.D. students only). The graduate committee will:

1. plan and approve the student's program of study.
2. review the student's progress in courses and suggest and approve changes in the program of study.
3. evaluate the student's progress in research and make appropriate recommendations.
4. meet and determine, on a yearly basis whether a student is making satisfactory progress and may continue toward a degree. If continuation is denied, the committee must notify the Program Director, in writing, of the reasons for this denial.

5. administer written and oral preliminary examinations to the doctoral student.
6. read and evaluate the student's thesis or dissertation.
7. conduct the required oral examinations.

Public Health Laboratory Science Program Committee (non-thesis M.S. students only). The Public Health Laboratory Science Program Committee is composed of a Chair and a single member chosen from each of the three departments participating in the MBMB program. The Public Health Laboratory Science Program Committee will:

1. provide programmatic oversight of the structure, curricular design, content and personnel involved in the non-thesis option M.S. program.
2. review applications from students for admission to the non-thesis option M.S. program and make admissions recommendations to the MBMB Program Director.
3. advise non-thesis option M.S. students in planning a course of study.
4. monitor student progress toward the non-thesis option M.S. degree.

Formal Course Requirements. All course requirements of the MBMB degree programs and Graduate School are minimum requirements. Additional courses may be required by the student's graduate committee (thesis option M.S. and Ph.D. students) or the Public Health Laboratory Science Program Committee (non-thesis option M.S. students) to meet any deficiencies or to provide proficiency in a specialized area. Certain courses are required of all students, while others meet the requirements of individual student's area of specialization, as determined by the student's graduate committee (thesis option M.S. and Ph.D. students). The Program Director, with the advice of the student's graduate committee or the Public Health Laboratory Science Program Committee may designate other courses within or outside of the Program to fulfill formal course requirements. Any course (or its equivalent) that meets the requirements of the Molecular Biology, Microbiology and Biochemistry graduate program whether taken at SIUC or at any other institution before admission to the Program need not be repeated. Course equivalency will be determined by the Program Director in consultation with the appropriate committee or member of the faculty.

The formal core course requirements for both the thesis option M.S. and Ph.D. degree can be met by taking either MBMB 451a,b, and 460; or their equivalent. All M.S. and Ph.D. students must take either MBMB 502, Introduction to Research, or MBMB 504, Research Methods, and must also take during each semester in residence 1 hour of MBMB 597, Seminar and Professional Training.

Thesis option M.S. students must take two courses and the doctoral students must take three courses from a list of approved courses for specialization. Only one 400 level course from this list can be used to meet this requirement.

Currently this list consists of MBMB 403, 405, 421, 423, 425, 441, 453, 455, 456, 470, 520, 530, 531, 532, 533, 543, 551, 552, 553, 560, and 562. These courses are selected with the approval of the student's graduate committee, Research Director or the Departmental Graduate Advisor. In addition, M.S. students are also required to earn at least 8 hours in research and thesis credit (MBMB 515, 598 and 599; a minimum of 3 and maximum of 6 hours for MBMB 599), prepare a thesis on the research project and pass a final oral examination, which serves as the comprehensive examination.

The formal course requirements for non-thesis option M.S. students with an area of specialization in public health laboratory sciences can be met by taking MBMB 403 or 405, 453 or 455, 451a, 451b, CHEM 431, MBMB 460, 510, 540, 541a and 541b. Non-thesis option M.S. students must also take 1 hour of MBMB 597 (Seminar and Professional Training) during each semester in residence. The Public Health Laboratory Science Program Committee will make recommendations to the Program Director whether courses taken at SIUC or other universities are equivalent to the program requirements.

Preliminary Examination and Dissertation for the Ph.D. Degree. Each student in the doctoral program must pass a preliminary examination and meet the Graduate School residency requirement before being advanced to candidacy. The students can take the preliminary examination after completing the formal course requirements.

The student's graduate committee will prepare and administer a written preliminary examination covering various areas of molecular biology, microbiology and biochemistry, with particular emphasis in the area of concentration declared. This declaration will be done by means of a prospectus of a dissertation composed of (1) a proposal for the dissertation research, (2) biographical information on the candidate, and (3) a list of the courses taken during the candidate's graduate program. The proposal should address the proposed graduate research project, and be written in the NIH (National Institutes of Health) or NSF (National Science Foundation) approved format. The prospectus shall be available to the committee members at least 14 days prior to the date of the examination.

A written examination score of at least 80% is required before a student can proceed to the oral portion of the preliminary examination. Upon satisfactory completion of the written examination, the candidate will meet with the committee as a whole and discuss the prospectus in detail. The committee will then conduct an oral preliminary examination. At this time, the committee may ask in-depth questions about the research project and other areas of molecular biology, microbiology and biochemistry. At least 4 of the 5 committee members must judge the oral performance acceptable for a student to pass the

preliminary examination overall. In the event that either the written or oral preliminary examination is failed, a student may request only one re-examination.

Successful completion of both written and oral examinations is required before a student can be advanced

to candidacy for the Ph.D. After admission to candidacy, the student must earn at least 24 dissertation credit hours (MBMB 600), prepare and defend a dissertation, and present a public seminar based on the student's research.

Courses (MBMB)

403-3 Medical Microbiology Lecture. (Same as Microbiology 403) A survey of the more common bacterial, mycotic and viral infections of humans with particular emphasis on the distinctive properties, pathogenic mechanisms, epidemiology, immunology, diagnosis and control of disease-causing microorganisms. Three hours lecture. Spring semester. Prerequisite: Microbiology 301; or consent of instructor.

405-3 Clinical Microbiology. (Same as Microbiology 405) *This course will be offered in Springfield only.* A comprehensive course for health science professionals covering the biology, virulence mechanisms and identification of infectious agents important in human disease and host-defense mechanisms. Clinical applications are emphasized. Three hours lecture. Prerequisite: Microbiology 301; or consent of instructor.

421-3 Biotechnology. (Same as Microbiology 421) Topics covered will include the genetic basis of the revolution in biotechnology, medical applications including genetic screening and therapeutic agents, industrial biotechnology and fermentation, and agricultural applications. Three hours lecture. Prerequisite: Microbiology 302; or consent of instructor.

423-3 Geomicrobiology. (Same as Microbiology 423 and Geology 423) The course will focus on the role that microorganisms play in fundamental geological processes. Topics will include an outline of the present understanding of microbial involvement of weathering of rocks, formation and transformation of soils and sediments, and genesis and degradation of minerals. Elemental cycles will also be covered with emphasis on the inter-relationships between the various geochemical cycles and the microbial tropic groups involved. Prerequisite: Microbiology 301 and Chemistry 210 and 211. Recommended: Geology 220, 221, or 222.

425-3 Biochemistry and Physiology of Microorganisms Lecture. (Same as Microbiology 425) Chemical composition, cellular structure and metabolism of microorganisms. Prerequisite: CHEM 340.

441-3 Viruses and Disease. An intensive, lecture-based course in virology which will emphasize principles of molecular virology, the ubiquity of viruses in nature, evolutionary relationships between viruses, co-evolution between virus and host, and the pathogenic consequences of some viral infections (e.g., AIDS, hepatitis, cancer, etc.). Prerequisites: MICR 460 or MBMB 460 or consent of instructor.

451-6 (3,3) Biochemistry. (Same as Biochemistry 451 and Chemistry 451) (a) Chemistry and function of amino acids, proteins and enzymes; enzyme kinetics; chemistry, function and metabolism of carbohydrates; citric acid cycle; electron transport and oxidative phosphorylation. (b) Chemistry, function, and metabolism of lipids; nitrogen metabolism; nucleic acid and protein biosynthesis; metabolic regulation. Three lectures per week. Must be taken in a, b sequence. Prerequisite: one year of organic chemistry.

453-3 Immunology Lecture. (Same as Microbiology 453) Principles of molecular and cellular immunology. Particular emphasis is given to molecular mechanisms involved in activation and maintenance of the immune response at the basic science level. The role of the immune system in medical diagnostic procedures and in human health is also discussed. Spring semester. Prerequisite: MICR 403; or consent of instructor.

455-2 Medical Immunology. (Same as Microbiology 455). *This course will be offered in Springfield only.* A survey of the components of the immune system and how they interact with each other to produce responses that are important in the control or mediation of human disease. Two hours lecture. Prerequisite: Microbiology 301; or consent of instructor.

456-3 Biophysical Chemistry. (Same as Biochemistry 456 and Chemistry 456) A one semester course in biophysical chemistry intended for biochemists and molecular biologists. Emphasis will be on solution thermodynamics, kinetics and spectroscopy applied to biological systems. Prerequisite: Chemistry 340 and 342, 451a or concurrent enrollment, Mathematics 141 or 150.

460-3 Bacterial and Viral Genetics. (Same as Microbiology 460) The genetic mechanisms and regulatory events that control gene transfer, lambda phage infection, recombination, and metabolic pathways including a brief introduction to bioinformatics, genome analysis and global regulatory function. Three hours lecture. Fall semester. Prerequisite: MICR 301 and 302, or consent of instructor.

470-3 Prokaryotic Diversity. (Same as Microbiology 470) A consideration of the major groups of prokaryotes with special emphasis on their comparative physiology and ecology. Prerequisite: Microbiology 301; or consent of instructor.

480-4 Molecular Biology of Microorganisms Laboratory. (Same as Microbiology 480) Genetic and biochemical analyses of microorganisms using a variety of techniques in molecular biology, molecular genetics and

biotechnology. Six hours laboratory per week plus two hours of supervised unstructured laboratory work in most weeks. Fall semester. Lab fee: \$60. Prerequisite: MICR 301 and 302 with a C grade or better and two (or concurrent enrollment in two) of the following: 421, 423, 425, or 460.

481-4 Diagnostic and Applied Microbiology Laboratory. (Same as Microbiology 481) Enrichment and isolation of prokaryotes from natural samples, diagnostic methods for the identification of pathogenic bacteria, and the nature of the immune response. Six hours laboratory per week plus two hours supervised unstructured laboratory work in most weeks. Spring semester. Lab fee: \$60. Prerequisite: Microbiology 301 and 302 with a C grade or better and two (or concurrent enrollment in two) of the following: 403, 453, or 470.

502-3 Introduction to Research. An introductory research course. Students rotate through at least three research laboratories. Lecture and laboratory hours to be arranged. Students can not get credit for both 502 and 504. Prerequisite: acceptance into the Molecular Biology, Microbiology and Biochemistry graduate program.

504-3 Research Methods. Problem definition, experimental design and research methods in specific areas of molecular biology, biochemistry and microbiology. Lecture and laboratory hours to be arranged. Students can not get credit for both 502 and 504. Prerequisite: acceptance into the Molecular Biology, Microbiology and Biochemistry graduate program.

505-1 Special Topics. Discussion of current research in specific areas of molecular biology, microbiology and biochemistry. One hour of group discussion per week. Prerequisite: consent of instructor.

510-3 Functions of Public Health System. This course is an introduction to the concepts and practices of public health at the community, state, and national levels. The course addresses the philosophy, purpose, history, organization, functions, activities and impact of public health practice. The course also addresses a number of important health issues and problems facing the public health system. Special emphasis will be placed on the role of public health laboratory in public health practice. Discussion questions and case studies are integrated into the course, serving to stimulate student participation in gaining in-depth knowledge about real world public health issues and practice. Prerequisite: Bachelor's degree in Microbiology or other Biology, Chemistry, Physical Science.

515-1 to 6 (1 to 6 per semester) Master's Degree Research. Individualized laboratory research and training. Graded credit for Master's Degree only. Maximum 6 credit hours. Prerequisite: admission to master's program in Molecular Biology, Microbiology and Biochemistry and consent of instructor.

520-2 Advanced Microbial Physiology and Control Mechanisms. The physiology, biochemistry and genetics of microbial regulatory mechanisms. Topics include

transport phenomena, catabolite and nitrogen repression, the stringent response, and autoregulatory phenomena. Two lectures per week. Prerequisite: 425; or Chemistry 451a and b, or consent of instructor.

528-1 to 3 Special Readings in Molecular Biology, Microbiology and Biochemistry. Supervised readings for qualified graduate students. Prerequisite: consent of instructor.

530-3 Advanced Cellular Biology. (This course will be offered in Springfield only). An advanced course based on current literature concerning the cellular biology of eukaryotes. Both students and faculty will make presentations followed by discussion. Topics will include: the cellular and subcellular structure and function of the lower eukaryotes, the biochemistry and biophysics of eukaryotic membrane systems and the higher subcellular functions of mammalian cells. Prerequisite: 400 level course in genetics and in biochemistry or consent of instructor.

531-3 Molecular and Cellular Biology. Lecture course in molecular and cellular biological techniques used in the study of organisms; structures and processes involved in genome organization; packaging and replication of DNA; transcription and RNA processing; recombination and transposition of DNA; gene regulation with emphasis on developmental processes; signal transduction; structure and function of cellular components; cell-cell interaction; etc. Prerequisite: Biochemistry 451b or consent of instructor; Microbiology 460 recommended.

532-3 Methods of Structural Biology. Lecture course in molecular computer graphics, macromolecular structure prediction, molecular dynamics, applications of NMR and X-ray methods to structural determinations of biological macromolecules; spectroscopic methods including UV, IR, Raman, fluorescence and circular dichroism methods. Prerequisite: Biochemistry 456 or consent of instructor.

533-3 Advanced Biochemistry. Lecture course in control mechanisms of biochemical processes, enzyme kinetics, regulation and allostery, coupled systems and energy transduction, membranes, transport, etc. Prerequisite: Biochemistry 451a or consent of instructor.

540-3 Basis of Public Health Laboratory Practice. The scientific basis of current laboratory practice of public health science in the areas of microbiology, immunology, molecular biology, environmental chemistry, biochemistry and instrumentation. (to accompany 541a,b) Prerequisite: 510, Bachelor's degree in Biology, Chemistry, Physical Science.

541A- (3-9) Public Health Laboratory Training. This course has a laboratory component of approximately 4-6 hours/week/credit hour of training in a functioning public health laboratory. The content of the course provides in-depth experience in the scientific basis and use of analytical methods in micro biology, immunology and molecular biology that are unique to public health laboratories at state and national level. Prerequisite: 510, concurrent with 540, Microbiology 301 or equivalent.

541B-(3-9) Public Health Laboratory Training. This course has a laboratory component of approximately 4-6 hours/week/credit hour of training in a functioning public health laboratory. The content of the course provides in-depth experience in the scientific basis and use of analytical methods in environmental chemistry and biochemistry that are unique to public health laboratories at the state and national level. Prerequisite: 510, 541A.

543-3 Host-Microbial Interactions. (This course will be offered in Springfield only). A lecture course that deals in depth with mechanisms of symbiosis and other interactions with respect to the biochemistry of microbe and host. Immunological aspects are discussed. Emphasis is placed on molecular mechanisms. Offered alternate years. Prerequisite: 403 or 405 or consent of instructor.

551-3 Advanced Immunology. A lecture course that intensively considers the most recent developments in antibody structure, antigenic analysis, and antigen-antibody reactions. A special focus will be on the use of immunology as a research tool. Prerequisite: 453 or equivalent, or consent of instructor.

552-3 Cellular Immunology. (This course will be offered in Springfield only). A lecture-discussion course covering contemporary aspects of cellular immunology. The cellular nature of immune responses as well as current information on the regulation of such responses will be considered. Topics will include cellular components of an immune response; receptors, recognition and signals; cellular cooperation; immune regulation; and tolerance and autoreactivity. Prerequisite: 453 or 455 or consent of instructor.

553-3 Advanced Medical Microbiology and Immunology. (Offered in Springfield only). A lecture course providing an in-depth analysis of the mechanisms of pathogenesis of bacterial, viral and mycotic infections. Immune mechanisms involved in recovery, development of immunity and infection mediated immunopathology will be covered. Prerequisite: 403 and 453; or 405 and 455; or consent of instructor.

554-1 to 4 (1 per semester) Evolution Seminar. (Same as Anthropology 554, Plant Biology 554, Zoology 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format with group discussions and student presentations. Graded S/U. Prerequisite: consent of instructor.

556-3 Phylogenetics. An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Prerequisite: consent of instructor.

560-3 Molecular Oncology. A lecture-discussion course in molecular and cellular biology of tumor pathogenesis. The lecture covers various aspect of current tumor biology. The in-depth discussion on recent articles will provide students with opportunity to become familiar with front-line research in molecular oncology. 451a and b or consent of instructor.

562-3 Molecular Genetics. A lecture and discussion course emphasizing current research and new techniques in replication, transcription, translation, genome organization, gene flow from a general systems viewpoint and regulation. Prerequisite: 460 or consent of instructor.

568-1 Current Topics in Oncology. A seminar-discussion course covering the pace-setting topics in oncology research. The topics will be selected by the course director. Students will research and select articles to be presented for discussion. The in-depth discussion on recent articles will provide students with opportunity to become familiar with cutting edge line research in oncology. Prerequisite: MBMB560 or consent of instructor.

570-1 to 15 (1 to 6 per semester) Advanced Topics. Advanced topics in (a) Molecular Biology, (b) Biochemistry, (c) Microbiology, (d) Immunology, (e) Virology, (f) Structural Biology, (g) Biophysics, and (h) General Cell Biology. Selected topics of current scientific interest to the faculty and students. Specific topic to be covered in any semester will be announced. Prerequisite: consent of instructor.

580-1 Current Topics in Evolution. (Same as Anthropology 580, Zoology 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate.

597-1 to 15 (1 per semester) Seminar and Professional Training. Departmental seminars, and other appropriate professional assignments. Graded S/U only. One hour required each semester in residence. Prerequisite: graduate standing.

598-1 to 66 (1 to 12 per semester) Research. Graded S/U only. Prerequisite: consent of instructor.

599-1 to 6 (1 to 6 per semester) Thesis. Research for Master's degree thesis. Prerequisite: consent of instructor.

600-1 to 36 (1 to 12 per semester) Dissertation. Research for Ph.D. degree dissertation. Prerequisite: consent of instructor.

601-1 (1 per semester) Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

MOLECULAR, CELLULAR, AND SYSTEMIC PHYSIOLOGY

www.siumed.edu/physiology
physiology@siumed.edu

SCHOOL OF MEDICINE

Graduate Faculty:

Arbogast, Lydia A., Professor, Ph.D., Indiana University, 1988; 1996. Molecular aspects of reproductive neuroendocrinology.

Banerjee, Chandra, Professor, *Emeritus*, M.D., University of Calcutta, 1955, Ph.D., Medical College of Virginia, 1967; 1974.

Bany, Brent M., Associate Professor, Ph.D., University of Western Ontario, 1997; 2003. Reproductive Physiology; Embryo implantation; Fertility.

Bartke, Andrzej, Professor, Ph.D., University of Kansas, 1965; 1984. Genetics and endocrinology of aging; long lived mutant mice and caloric restriction; growth hormone and insulin; reproductive endocrinology.

Browning, Ronald A., Professor, *Emeritus*, Ph.D., University of Illinois Medical Center, Chicago, 1971; 1973.

Collard, Michael W., Associate Professor, Ph.D., Washington State University, 1987; 1993. Mouse Models of Cancer, Spermatogenesis and Epigenetic Gene Control.

Coulson, L. Richard, Professor, *Emeritus*, Ph.D., University of Toronto, Canada, 1971; 1978.

Cox, Thomas C., *Emeritus*, Professor, Ph.D., Arizona State University, 1979; 1982.

Dunagan, Tommy T., Professor, *Emeritus*, Ph.D., Purdue University, 1960; 1962.

Ellert, Martha, Associate Professor, *Emeritus*, Ph.D., University of Miami, 1967; 1975.

Ellsworth, Buffy S., Assistant Professor, Ph.D., Colorado State University, 2002; 2007. Endocrinology, pituitary gland development.

Falvo, Richard E., Professor, *Emeritus*, Ph.D., University of Wyoming, 1970; 1973.

Ferraro, James S., Associate Professor, Ph.D., The Chicago Medical School, 1984; 1987. Physiological and behavioral aspects of circadian rhythmicity; reproduction and sexuality.

Hales, Dale Buchanan, Professor and *Chair*, Ph.D., University of Colorado Health Sciences Center, Denver, 1983; 2009. Reproductive endocrinology, role of oxidative stress and inflammation in hormonal carcinogenesis, ovarian cancer, steroid biochemistry, male reproduction.

Hales, Karen Held, Assistant Professor, Ph.D., University of Colorado Health Sciences Center, Denver, 1985; 2009.

Molecular and cellular endocrinology, RNA biology, role of epigenetics and micro RNAs in cancer.

Hayashi, Kanaki, Research Assistant Professor, Ph.D., Iwate University, Japan, 2002; 2008. Reproductive biology and cancer biology.

Huggenvik, Jodi I., Associate Professor, Ph.D., Washington State University, 1985; 1993. Regulation of gene expression by transcription factors and epigenetic mechanisms.

Hunter, William S., Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1971; 1975.

Maclean, James A., Assistant Professor, Ph.D., University of Missouri-Columbia, 2000' 2007. Reproductive biology, spermatogenesis, pre-implantation development.

Murphy, Laura, Professor, Ph.D., Medical College of Georgia, 1984; 1987. Anti-cancer effects of botanicals; Ginseng/cancer chemotherapy drug interactions; Marijuana effects on neuroendocrine function and appetite.

Myers, Hurley, Professor, *Emeritus*, Ph.D., University of Tennessee, 1969; 1971.

Narayan, Prema, Assistant Professor, Ph.D., University of Minnesota, 1984; 2005 Mouse models of gonadotropin receptor function, reproduction, and endocrinology.

Nequin, Lynn, Associate Professor, *Emeritus*, Ph.D., University of Illinois Medical Center, Chicago, 1970; 1976.

Patrylo, Peter R., Associate Professor, Ph.D., Rutgers University—UMDNJ/RWJMS, 1991; 2001. Plasticity and regulation of local neuronal networks during aging and following injury, particularly in the context of epileptogenesis.

Shanahan, Michael F., Professor, *Emeritus*, Ph.D., University of Michigan, 1976; 1985.

Steger, Richard W., Professor and, *Emeritus*, Ph.D., University of Wyoming, 1974; 1985.

Strader, April D., Assistant Professor, Ph.D., University of Wisconsin-Milwaukee, 2002; 2005 Neuroendocrine regulation of body weight regulation.

Wade, David, Associate Professor, *Emeritus*, Ph.D., Cambridge University, 1967; 1974.

Yau, William M., Professor, *Emeritus*, Ph.D., Medical College of Virginia, 1971, 1973

Graduate courses in physiology may be taken leading to the Master of Science or the Doctor of Philosophy degrees with a major in molecular, cellular, and systemic physiology. Graduate courses in molecular, cellular, and systemic physiology may also contribute to a program leading to a

Master of Science degree major in biological sciences or to a teaching specialty for the Master of Science in Education degree major in secondary education or in higher education.

The Department of Physiology offers advanced training in mammalian physiology, aging, cancer biology, cell physiology, molecular biology, molecular endocrinology, neuroendocrinology, neurophysiology, neuropharmacology, reproductive biology, and reproductive endocrinology, and human anatomy. Students entering the graduate training program are advised to plan the course work so as to acquire a broad knowledge of the field before emphasizing one of these sub-disciplines. The advisory system in the department is set up to help students in planning their work. All graduate training programs in the department are subject to approval of the graduate program committee (GPC) of the department.

Each term the student must be engaged in a training assignment which supplements formal course work and will consist of research or teaching or both. The student is required to have participated in both types of activities, research and teaching, as a graduate student at SIUC as a condition for receiving a graduate degree.

Prerequisites for graduate training in molecular, cellular, and systemic physiology include an undergraduate degree in one of the biological, physical, or behavioral sciences, preferably with one year each of physics, mathematics, and chemistry.

Financial Assistance

The Department of Physiology offers financial assistance to qualified applicants accepted by the department. The funds which provide this assistance come from a variety of sources which include: teaching assistantships from the department; university fellowships which are applied for directly by the student; and research assistantships from grants obtained by the graduate program faculty. Students interested in financial assistance should fill out the Financial Support Form available online and in the Department of Physiology office. Additional financial aid information may be found at the SIU Financial Aid Office web page. Financial assistance depends on availability and the student's qualifications and academic status. Continued financial support is contingent upon the student's progress toward the degree and good academic standing.

The department may support master's students for up to 24 months and Ph.D. students for 48 months on department teaching assistantships. However, every effort will be made to encourage the student and his/her adviser to find alternative sources of funding. Continuation of support will be conditioned on satisfactory performance in areas of academics, research, and teaching. Academic performance will be based on good standing in the Graduate School (3.25 GPA) and passage of the preliminary exam by the end of the third year (Ph.D. students only). Satisfactory research performance will be based on the filing of an approved research proposal by the end of the first (master's) or second (Ph.D.) calendar year and after that time by an annual memo from the student's advisory committee indicating progress in the area of research. It will be the

student's responsibility to provide this documentation to the GPC. Evaluation of teaching effectiveness will be carried out by the GPC from sources possibly but not limited to the course coordinator, student evaluations and by direct observation of classes by the GPC.

A departmental stipend for graduate student research will be available to molecular, cellular, and systemic physiology graduate students working in laboratories of regular physiology department faculty members provided that the student is making satisfactory progress in their research program and remains in good academic standing (as defined above).

Research Tools

Doctoral students must acquire competence in one research tool and are encouraged to attain competence with two tools. The requirements for a research tool may be satisfied by establishing proficiency in advanced statistics, computer science, electronics, advanced mathematics, electron microscopy, foreign language (with suitability of a particular language being determined by the student's committee), or some technique which is acceptable to the student's advisory committee. Courses which are normally part of a track requirement or are highly recommended for students in a particular track cannot serve as tools for students in that track. Approval of a given tool by the student's committee will be granted only if the student has demonstrated proficiency by taking a formal course and receiving a grade (preferably *B* or better) or by passing a formal examination given by an expert in that field (preferably a faculty member in the university department where the subject is normally taught).

Master's Degree

The application and transcript(s) should be submitted to the Department of Physiology.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Molecular, Cellular, and Systemic Physiology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

All applicants must submit a brief (300–600 words) typed statement of goals and ambitions indicating why they wish to do graduate work in one of the graduate program tracks and three letters of recommendation submitted by individuals who can comment on their academic abilities, character, and potential for doing research. The letters should be written on forms supplied by the department and on official letterhead.

The Graduate School requires an earned grade point average (GPA) of 2.70 or better (*A* = 4.0) on all undergraduate work. A minimum GPA of 3.00 (*A* = 4.0) in all

undergraduate and graduate work is needed for serious consideration.

The Graduate Record Exam (GRE) is required, and the score on the general part may be submitted with the application.

The graduate program committee of the department will normally examine the credentials, which include the application form, transcript(s), letters of recommendation, goal statement, and GRE scores, only after all materials have been received.

International students must take the TOEFL exam and obtain a score greater than 550 (paper score) or 220 (computer score) to qualify for admission by the Graduate School, and must pass a Test of Spoken English prior to the awarding of teaching assistantships by the Department of Physiology.

Advisory Committee

The Chair of the Graduate Program Committee will act as an advisor to new graduate students until a research advisor is selected. The choice of a research advisor is a very important step and should be carefully considered. During the first semester, most students rotate through three research laboratories to get acquainted with faculty members and research programs before selecting an advisor who will direct the thesis research and help plan course work.

The functions of the research advisor are:

1. To provide guidance in the student's research and the facilities required.
2. To provide mentorship in conducting, evaluating, and publishing scientific research.
3. To serve as chair of the Advisory Committee and consultant for the selection of the other members of the Advisory Committee (at least three additional members from the graduate faculty, including one from outside the department).

Members of the Advisory Committee should provide expertise in or complementary to the research area and provide guidance in the selection of course work. The student should meet with the committee yearly or as needed to discuss research and academic progress.

Following the selection of a research advisor and the Advisory Committee, the Graduate Faculty Committee Approval Form (available online and in the department office) must be filled out with the names and signatures of committee members and filed with the department secretary. The completed form will then be forwarded to the Graduate School for final approval.

Total Hours Required

A total of 30 semester hours at the 400- and 500-level is required for the master's degree. Of the total hours completed, at least 21 of these must be graded (*A, B, C*) hours. At least 15 of the total 30 must be 500-level courses taken at SIUC. Of these 15, a *minimum* of 3 hours of PHSL 599 (thesis) is *required*. More than 3 hours of 599 may be

taken, however only 6 may be counted toward the 500-level requirement.

Thesis

The thesis should represent a competent piece of original research carried out on a specific physiological problem or area under the research advisor's supervision. It should include an adequate review of the literature, a statement of the hypothesis, a set of experiments testing the hypothesis by whatever methods are appropriate, an analysis of the results, and an interpretation of the work and its significance. Upon completion of the thesis research, a final department seminar is presented followed by an oral examination. The examination will be conducted by the Advisory Committee and will cover the subject of the thesis and other matters related to the discipline.

Doctoral Program

The Graduate School requires a grade point average in previous graduate work of at least 3.25 and acceptance by the academic unit offering the Ph.D. program. See the following pages for accelerated and direct entry options.

The application and transcript(s) should be submitted to the Department of Physiology. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Molecular, Cellular, and Systemic Physiology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. The Graduate Record Exam (GRE) is required, and the score on the general part must be submitted with the application.

All applicants must submit a brief (300–600 words) typed statement of goals and ambitions indicating why they wish to do graduate work in one of the graduate program tracks and three letters of recommendation submitted by individuals who can comment on their academic abilities, character, and potential for doing research. The letters should be written on forms supplied by the department and on official letterhead. The graduate program committee of the department will examine the credentials which include the application form, transcript(s), letters of recommendation, goal statement and GRE scores (if applicable) only after all materials have been received.

International students must take the TOEFL exam and obtain a score greater than 550 (paper score) or 220 (computer score) to qualify for admission by the Graduate School, and must pass a Test of Spoken English prior to the awarding of teaching assistantships by the Department of Physiology.

Ph.D. Direct Entry Option

This option is presently available for admission to the Graduate School. Contact the Department of Physiology for further information regarding this option. The Depart-

ment of Physiology may accept a post-baccalaureate student directly into a Ph.D. program provided that the student has:

1. A cumulative undergraduate grade point average of 3.5 ($A = 4.0$).
2. Sufficient undergraduate course work in biology, chemistry, physics, and mathematics or an outstanding score on the graduate record exam (GRE) on (a) the general part or (b) the advanced part in biology, chemistry, physics, or mathematics.

A student admitted to the doctoral program under this option is subject to the admissions requirements stated above and all other requirements of the doctoral degree, including: course work, retention, residency, examinations, research proposal, dissertation, and all applicable time limits. The Advisory Committee may adjust the course work and requirements of the student based on the student's background and research area. Students who have taken one or more core courses at another accredited university may be given credit toward their core requirements if such courses are deemed equivalent to our core courses by the Graduate Program Committee and department grade requirements are met.

Ph.D. Accelerated Entry Option

The Department of Physiology offers the Ph.D. accelerated entry option to a graduate student in the Master's program who demonstrates the intellect, research aptitude, and commitment for pursuing a doctoral degree. At the end of at least one year of studies at the Masters level, the student may request that their Advisory Committee review their qualifications and performance in order to establish eligibility for entry into the doctoral program under this option. The student must have a GPA of at least 3.25 ($A = 4.0$) in graduate course work and letters of reference attesting to the student's abilities and potential to perform doctoral level research. The Advisory Committee must establish that the student is prepared and able to conduct research at the doctoral level, which may be established by publications; presentations at meetings; depth of understanding; and quality of seminars, presentations, and research proposal. The Advisory Committee will make a recommendation that the student should either continue in the Master's program or advance into the doctoral program.

After the student's eligibility has been established, the research advisor and/or the Advisory Committee will prepare a written review of the student's qualifications and submit it to the Graduate Program Committee for approval. The Graduate Program Committee will then submit a recommendation to the Chair of the Department of Physiology, who will in turn submit a letter to the Graduate School requesting a waiver of a master's degree or master's equivalency and entry into the doctoral program.

The student will need to submit the following items to the Graduate School: A letter of acceptance into the doctoral

program from Graduate Program Committee Chair, a Graduate School application form (indicating Ph.D.), and a completed Notification of Accelerated Entry Option Students Form.

A student admitted to the doctoral program under this option is subject to all requirements of the doctoral degree, including: course work, retention standards, residency, examinations, research proposal, dissertation, and all applicable time limits.

Please note that only courses taken after admission to the doctoral program will count toward residency.

Advisory Committee

The chair of the Graduate Program Committee will act as an advisor to new graduate students until a research advisor is selected. The choice of a research advisor is a very important step and should be carefully considered. During the first semester, most students rotate through three research laboratories to get acquainted with faculty members and research programs before selecting an advisor who will direct the dissertation research and help plan course work.

The functions of the research advisor are:

1. To provide guidance in the student's research and the facilities required.
2. To provide mentorship in conducting, evaluating, and publishing scientific research.
3. To serve as chair of the Advisory Committee and consultant for the selection of other members of the Advisory Committee (at least four additional members from the graduate faculty, including one from outside the department).

Members of the Advisory Committee should provide expertise in or complementary to the research area and provide guidance in the selection of course work. The student should meet with the committee yearly or as needed to discuss research and academic progress.

Following the selection of a research advisor and the Advisory Committee, the Graduate Faculty Committee Approval Form (available in the department office) must be filled out with the names and signatures of committee members and filed with the department secretary. The completed form will then be forwarded to the Graduate School for final approval.

Total Hours Required

The requirements for the Ph.D. degree are those established by the Graduate School, the Guide to Graduate Studies and the student's advisory committee. The Graduate School requires 24 semester hours prior to candidacy and 24 semester hours of dissertation credit.

Preliminary Examination

Preliminary examinations for doctoral students consist of a set of written exams covering the student's research area and course work, a research proposal in the area of the

dissertation research project, and an oral defense of the proposal. In most cases, the written exams are taken in early August after completion of the second year of study. After passing the written exams, the student will have one month to write the research proposal. The student's Advisory Committee will evaluate the research proposal and if it is found acceptable, the oral defense of the proposal will be scheduled with the Advisory Committee. Details of the preliminary examinations are available from the Graduate Program Committee.

Dissertation

The dissertation should represent a competent piece of original research carried out on a specific physiological problem or area under the advisor's supervision. It should include an adequate review of the literature, a statement of the hypothesis, a set of experiments testing the hypothesis by whatever methods are appropriate, an analysis of the results, and an interpretation of the work and its significance. The research should be of sufficient quality and quantity to merit publications in peer-reviewed journals. Upon completion of the dissertation research, a final department seminar is presented followed by an oral examination. The examination will be conducted by the Advisory Committee and will cover the subject of the dissertation and topics related to the discipline.

Certificate in Anatomy

The purpose of the anatomy certificate is to allow graduate students to become proficient in anatomy teaching. This will allow them to compete more effectively for jobs in this field. Students are eligible for the anatomy certificate if they are in an existing anatomically-based master's or Ph.D.

program (e.g. Physiology, Anthropology, or Zoology). Additional prerequisites (e.g., embryology, basic vertebrate anatomy) are preferred. Students lacking such prerequisites will be encouraged to obtain them prior to admission into the anatomy certificate program. The Graduate Program Committee of the Department of Physiology will review all applications. In addition to graduate coursework in anatomy, students in the anatomy certificate program will obtain experience teaching gross anatomy to undergraduates and medical students. A minimum of 17-18 graduate credit hours are required for fulfillment of the certificate requirements. They are: Advanced Human Anatomy, (PHSL 401a,b, 10 hours), Histology, (ZOOL 409, 4 hours) and either Neuroanatomy, (PHSL 573, 3 hours) or Comparative Vertebrate Anatomy, (ZOOL 418, 4 hours). Where appropriate, these courses may also count for credit toward the master's or Ph.D. degree. The Graduate Program Committee in the Department and the student's advisory committee will make recommendations for other coursework and oversee the student's progress. Students supported by assistantships will have the same teaching obligations as all other departmentally supported students. Students will be required to teach at least two semesters of gross anatomy assisting Physiology and Anatomy Department faculty in the Medical School.

For more information, contact:

Chairman of the Graduate Program Committee
Department of Physiology, School of Medicine
Southern Illinois University
Carbondale, IL 62901-6512
Telephone: 618-453-1544
Email: physiology@siumed.edu

Courses (PHSL)

401-5 Advanced Human Anatomy with Laboratory. A-B sequence. Laboratory dissection of the human body with lectures as needed. Primarily for students majoring in physiology biological sciences, or anthropology. Prerequisite: 301 or comparative anatomy. Enrollment by consent of instructor. Lab fee: \$20. Prerequisite: 301, comparative anatomy or vertebrate anatomy. A lab fee of \$20.00 will be assessed.

410a,b-8 (4,4) Mammalian Physiology. Physical and chemical organization and function in mammals, with emphasis on the human. Physiology of blood and circulation, respiration, digestion, metabolism, excretion, endocrines, sensory organs, nervous system, muscle and reproduction. Primary course for all students majoring in physiology or related sciences. Four lectures and one three-hour laboratory session per week. May be taken in any sequence. Lab Fee:\$20 Prerequisite: CHEM 200, 201,210,211: PHYS 203 A & B and PHYS 253 A & B or PHYS 205 A & B and PHYS 255 A & B.

420a,b-6 (3,3) Principles of Pharmacology. Examines basic principles of pharmacology (pharmacokinetics) and the action of various classes of drugs on living organisms. Drug classes covered include those affecting most organ systems of the human body, such as the nervous, cardiovascular, gastrointestinal and renal systems as well as drugs used for antibiotic and cancer chemotherapy. Three lectures per week. Prerequisites: Chem. 340 and 342 (or equivalent), PHSL 310 or 410.

430-3 Cellular and Molecular Physiology. This course will examine the molecular and cellular aspects of physiology, with special emphasis on the experiments used to examine the regulation of gene expression, protein activities, and cellular functions in eukaryotes. Topics include: mechanisms regulating gene expression, signaling pathways, cancer biology, and the use of experimental model organisms. Required of Physiology majors. Prerequisite: BIOL 200 A & B or CHEM 350 & 351.

433-6 (3,3) Comparative Physiology. Variations of physiological processes in animal phyla, and comparison of these with human physiology. (a) Osmotic and ionic regulation; digestion, nutrition, and metabolism; excretion; respiration; defense and resistance. (b) Muscles and movement; circulation; nervous systems and sensory information; coverings and support; endocrine regulation; reproduction. Three lectures per week. Prerequisite: BIOL 200 A & B.

440-6 (3,3) Biophysics. (a) Biomathematics, biomechanics and biotransport. (b) Bioelectrics and bio-optics applied to physiological problems. Three lectures per week. Prerequisite: MATH 141 or 150; PHSL 310; PHYS 203 A & B and 253 A & B or PHYS 205 A&B and 255 A&B May be taken in b,a sequence with consent of instructor.

450-3 Advanced Human Sexuality. An advanced course intended to supplement and expand the critical examination of those topics covered in 320, Reproduction and Sexuality. The objective of this course is to examine the physiological and behavioral basis of human reproduction and sexuality. Examines how humans reproduce from a physiological perspective and all of the aberrations and clinically relevant dysfunctions, as well as the spectrum of human sexual behaviors including typical and atypical sexual behavior, paraphilias and diversity of human relationships. Prerequisite: 320.

460-2 Electron Microscopy. Lecture course designed to introduce the student to the theory and principles of electron microscopy. Two lecture hours per week. Prerequisite: senior standing or permission of instructor.

462-3 Biomedical Instrumentation. (Same as Electrical Engineering 462.) Diagnostic and therapeutic modalities related to engineering. Cardiovascular, neural, sensory and respiratory instrumentation. Prerequisite: consent of instructor.

470-3 Biological Clocks. Study of the temporal aspects of diverse physiological and behavioral functions which possess diurnal and sectional periodicity. Species covered will include many eukaryotic organisms including plants, but will mainly stress mammals. Oscillations in sleep-wake cycle, locomotion, reproduction, hormonal secretion and numerous other processes will be explored. In addition, the effects of biological clocks in humans and the effect of jet lag and depression will be examined. Prerequisite: 310.

500-1 to 6 (1 per semester) Advanced Seminar in Physiology. Presentation of research and current literature in physiology. Required of all graduate students in physiology. Graded S/U only.

501-1 Presentation of Physiological Data. Research areas and special topics requisite for conducting scientific research will be presented. Students will learn how to organize a talk on experimental findings in physiology, prepare slides, and communicate effectively in an oral presentation format. Graded S/U only.

510-3 Experimental Methods in Physiology. The main objectives of this course are to acquaint the student with

the techniques and the equipment used in modern research laboratories and to provide instruction in the principles and practice of scientific experimentation. Prerequisite: consent of instructor.

530-3 Advanced Cellular and Molecular Physiology. This course will examine the molecular and cellular aspects of mammalian physiology using the primary literature as the source of topics for oral presentations and discussions. Prerequisite: consent of instructor.

531-2 Advanced Cellular Physiology Laboratory. One one-hour lecture and one three-hour laboratory per week, designed to be taken concurrently with 530. Basic experimental procedures used in studies in cellular physiology.

533-4 Advanced Comparative Physiology. Advanced concepts and techniques used in current studies in comparative physiology. Three lectures and one discussion period per week.

540-3 Advanced Biophysics. Survey of recent biophysical research with emphasis on historical development of current advances. Three lectures per week. Prerequisite: 440 or its equivalent.

570-3 Advanced Physiological Topics. Studies of current research and literature in various topic areas of physiology. One or more of the following list of topic sections will be offered each semester, so that each section will be available once every two or three years. (a) Biological structure, (b) Cardiovascular physiology, (c) Respiratory physiology, (d) Nerve-muscle physiology, (e) Metabolism, (f) Gastrointestinal physiology, (g) Neurophysiology, (h) Radiation physiology, (i) Environmental physiology, (j) Biomathematics, (k) Biomedical computing, (l) Endocrinology, (m) Animal care, (n) Biophysics, (o) Pharmacology, (p) Special topics, (q) Reproductive physiology, (r) Renal physiology.

571-3 Research and Problems in Biological Transmission Electron Microscopy (TEM). Laboratory course designed to provide experience in techniques for biological electron microscopy. Student, with the aid of the instructor, designs and carries out a project in transmission electron microscopy. Two three-hour laboratories per week. Prerequisite: 460 or special permission of instructor.

573-3 Neuroanatomy. A detailed survey of human neuroanatomy. The course will include radiographic, cross-sectional and developmental anatomy of the nervous system. Dissection of the human brain will occur in general laboratory sessions. Three lectures per week.

574-3 Neuropharmacology. (Same as Pharmacology 574.) A detailed examination of the biochemical aspects of neuropharmacology with emphasis on neurotransmitters—their synthesis, storage, release and metabolism in the central and peripheral nervous system. Considerable emphasis is placed on major research developments (both past and present) that influence how one studies the action of drugs on the nervous system. Prerequisite: 410, and Chemistry 450, or equivalent.

575-3 Neuroendocrinology. Designed to investigate and discuss the current research and historical aspects of the

field of neuroendocrinology. In addition, designed to have students examine and evaluate current literature in the field and through discussion have them present their analysis of the research. One hour of lecture, one hour of discussion of textual material, one hour of multiple reports on library research. Prerequisite: 410a, b or equivalent, or an undergraduate/graduate endocrinology course, or consent of instructor.

581A-3 Multimedia in Medical Education. Students will participate in the daily discussions of a medical education multimedia corporation. Emphasis will be on process and instructional design. Students will be supervised by team members in the production of commercial educational packages. Skills to be acquired include the ability to digitize images and sound, and to create a Power Point presentation on a topic of the student's choice.

581B-6 Advanced Multimedia in Medical Education. Intended to be a "hands on" course which contributes significantly to the development of multimedia teaching materials for medical education. Students will be assigned to a project as part of a development team. Under supervision of the team leader, they will assist in software design, material preparation and assembly. Prerequisite: 581a.

582-3 Clinical Application/Radiology. The study of human anatomy through imaging techniques such as standard x-rays, computer assisted tomography (CT) and magnetic resonance imaging (MRI). The course will include individualized work with clinical specialists in a hospital setting for 1/2 day per week with times to be arranged. Prerequisite: acceptance into the anatomy certificate program. Graded *S/U*. Prerequisite: graduate status, acceptance into anatomy certificate program.

590-1 to 4 Readings or Research in Current Physiological Topics. By special arrangement with the instructor with whom the student wishes to work. Graded *S/U* only.

598-1 to 48 (1 to 12 per semester) Research. The credit hours selected for this course registration will be determined by the major professor of the student. In a typical semester no more than six hours will be taken by a student except under special circumstances. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 6 Thesis Research. Research for thesis for Master's degree.

600-1 to 32 (1 to 16 per semester) Dissertation Research. Research for dissertation for Ph.D. degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

MUSIC

www.music.siu.edu/
gradmus@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

- Allison, Robert**, Associate Professor, D.M.A., University of Illinois, 1988; 1982. Trumpet, jazz.
- Barta, Michael**, Professor, M.Mus., Liszt Academy Conservatory, 1975; 1985. Violin, music literature.
- Beattie, Donald**, Associate Professor, M.Mus., University of Colorado, 1977; 1979. Class piano, piano pedagogy.
- Benyas, Edward**, Professor, J.D., Northwestern University, 1987; 1994. Oboe, Orchestra.
- Best, Richard**, Professor *Emeritus*, Metropolitan Opera School, 1968; 1984.
- Bottje, Will Gay**, Professor, *Emeritus*, A.Mus.D., Eastman School of Music, 1955; 1957.
- Breznikar, Joseph**, Professor, M.Mus., University of Akron, 1977; 1980. Classical guitar.
- Brown, Philip**, Associate Professor, M.M.E., University of North Texas, 1983; 1991. Jazz, string bass, music business.
- Carter, Clarence**, Assistant Professor *Emeritus*, M.Mus., Southern Illinois University 1973; 2000.
- Chi, Meng-Chun**, Assistant Professor, D.M.A., Rutgers University, 2003. Viola, music theory.
- Davenport, Susan**, Assistant Professor, D.M.A., Texas Tech University, 2001; 2005. Choral.
- Delphin, Wilfred**, Professor, *Emeritus*, D.M.A., University of Southern Mississippi, 1978; 1988. Piano.
- Dillard, David**, Assistant Professor, D.M.A., University of Michigan, 2004. Voice.
- Fink, Timothy**, Associate Professor, M.F.A., Southern Illinois University Carbondale, 1993; 1994. Opera music theater.
- Fligel, Charles**, Associate Professor, *Emeritus*, M.Mus., University of Kentucky, 1966; 1976. Bassoon, music theory.
- Grizzell, Mary Jane**, Assistant Professor, *Emerita*, M.Mus., Eastman School of Music, 1943; 1959.
- Hagemeier, Billie J.**, Assistant Professor, D.M.A., Indiana University, Bloomington, 2005; 2007. Voice, opera.
- Hanes, Michael D.**, Professor, *Emeritus*, M.M.Ed., Southern Illinois University Carbondale, 1965; 1970.
- Hussey, George**, Professor, *Emeritus*, M.A.Ed., Washington University, 1963; 1963. Oboe, music appreciation, orchestra.
- Johnson, Maria**, Associate Professor, Ph.D., University of California, Berkeley, 1992; 1997. Ethnomusicology.
- Kato, Yuko**, Assistant Professor, D.M.A., Manhattan School of Music, 2007; 2008. Piano.
- Lee, Junghwa**, Assistant Professor, D.M.A., Eastman School of Music, 1999; 2005. Piano.
- Lenz, Eric**, Assistant Professor, D.M.A., University of Alabama, 2002; 2003. Cello, music theory.
- Lord, Suzanne**, Associate Professor *Emerita*, D.M.A., Florida State University, 1998; 1997.
- Mackey, Melissa**, Assistant Professor, D.M.A., University of Southern California, 2002; 2002. Bassoon, music history.
- Mandat, Eric**, Professor, D.M.A., Eastman School of Music, 1986; 1981. Clarinet, composition.
- McHugh, Catherine**, Professor, *Emerita*, Ed.D., Columbia University, 1959; 1969.
- Mellado, Daniel**, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1979; 1979.
- Mochnick, John**, Professor, *Emeritus* D.M.A., University of Cincinnati, 1978, 1984.
- Morehouse, Christopher**, Assistant Professor, D.M.A., University of Cincinnati College-Conservatory of Music, 2005; 2005. Bands, conducting.
- Poulos, Helen**, Associate Professor, *Emerita*, D.M., Indiana University, 1971; 1969.
- Resnick, Robert**, Professor, *Emeritus*, M.Mus., Wichita State University, 1949; 1949.
- Roubos, Robert**, Professor, *Emeritus*, D.M.A., University of Michigan, 1965; 1981.
- Simmons, Margaret**, Professor, M.Mus., *Emerita*, University of Illinois, 1976; 1977.
- Stemper, Frank**, Professor and *Graduate Coordinator*, Ph.D., University of California, 1981; 1983. Composition.
- Stover, Pamela**, Assistant Professor, Ph.D., Indiana University School of Music, 2003; 2004. Music Education.
- Taylor, Charles**, Associate Professor, *Emeritus*, Ed.D., Columbia University, 1950; 1957.
- Transue, Paul**, Assistant Professor, D.M.A., Eastman School of Music, 1999; 2007. Piano.
- Underwood, Jervis**, Professor, *Emeritus*, Ph.D., North Texas State University, 1970; 1971. Flute, musicology, theory.
- Wagner, Jeanine**, Professor, D.M.A., University of Illinois, 1987; 1984. Voice, opera.
- Webb, Marianne**, Professor, *Emerita*, M.Mus., University of Michigan, 1959; 1965. Organ, music theory.
- Weiss, Robert**, Professor *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1984; 1978.
- Werner, Kent**, Associate Professor, *Emeritus*, Ph.D., University of Iowa, 1966; 1963.

The School of Music faculty numbers twenty-eight full-time positions. Within its ranks are to be found many outstanding performers and educators, representing a broad diversification of background and talent. Faculty members

present many solo and small ensemble performances, as well as clinics and workshops, during the school year. Sixteen members of the faculty hold doctorates or its equivalent.

Library Facilities

In addition to Morris Library, the School of Music has its own recording and score library, including modern stereo listening facilities, cassettes, and cassette decks for self-instruction in ear training and music literature, some 1600 LP recordings and tapes, over 1100 scores, many in multiple copies, and 94 books and reference works. The self-instruction center in Morris Library provides tape recordings of theory and literature for student use.

Musical Organizations

A wide variety of performing opportunities is available, including the University Symphony, symphonic band, wind ensemble, jazz ensemble, Marching Salukis, brass ensemble, guitar ensemble, percussion ensemble, choral union, concert choir, chamber choir, and vocal jazz ensemble. The Marjorie Lawrence Opera Workshop presents one full opera production each year in addition to several programs of small operas and operatic excerpts.

Musical Performances

Some 130 School of Music programs are presented each year, plus Celebrity Series appearances by well-known concert artists. A program booklet for further details concerning concert activity is available through the School of Music.

Other Resources

A fifty-eight rank Reuter pipe organ, the principal instrument for recitals and teaching, is installed in Shryock Auditorium. Available for practicing are a four-rank Ott tracker organ, a six-rank Moeller, and a four-rank Wicks. Eighty-five pianos, including twenty-two in practice rooms, an eighteen-unit electronic piano lab, and a full complement of band and orchestral instruments are available.

Graduate Assistantship and Fellowship Applications

Any student seeking a master's degree may apply to the coordinator of graduate studies in music for a graduate assistantship. An undergraduate overall grade-point average of 2.8 ($A = 4$ points) is required for consideration. The assignment of assistantships, for those who are eligible, is based upon School of Music needs and student qualifications. Graduate Assistants must enroll in courses for the required 6 hour minimum each semester of residency which count toward degree requirements. A student with an overall grade-point average of 3.5 or better is eligible to apply for a graduate fellowship involving no School of Music assignment. The School of Music offers six programs leading to the Master of Music degree. Each master's degree requires a minimum total of 30 credits, with a minimum total of 15 credits at the 500 level. Students enrolled in a program leading to a Ph.D. degree major in education, with a concentration in curriculum and instruction education, may choose the elective portion of their programs from graduate courses offered in the School of Music.

Master of Music Degree Standard Curricula

MUSIC HISTORY AND LITERATURE CONCENTRATION

Majors complete MUS 501-3; 502-4 (2,2); 2 credits (1,1) from 566; 6 credits selected from 475, 476, 477, 573, 574, or 578; 599-6; 6 credits in music history-literature electives; 3 elective credits in non-music history-literature courses. In addition to the general requirements for graduation, music history/literature majors must have successfully completed two years of a foreign language (preferably French or German), at the undergraduate level, or pass 388-488 (German or French) as a research tool with a grade of *B* or higher.

MUSIC THEORY AND COMPOSITION CONCENTRATION

Majors complete MUS 501-3; 502-4 (2,2); 545-3; 3 credits from the 470 or 570 series; 480-4 (580-4 must be completed by composition majors); 2 credits (1,1) selected from 566; 599-6; 5 credits of approved music electives in theory-composition, history-literature, conducting, or performance.

PERFORMANCE CONCENTRATION

Majors complete MUS 501-3; 502a or b (2); 5 credits from 461, 482, or 470 or 570 series; 8 credits in 540; 2 credits from 566, 567, or 568 (or other electives if keyboard major); 6 credits in 595 and 598 (recital and document); 4 credits in non-performing music elective. If specializing in conducting, majors must complete MUS 501-3; 502-4 (2,2); 556-4 (2,2); 3-6 credits from the 470 or 570 series; 2-4 credits in 440; 2 credits from 566 (1,1) or other electives if keyboard major; 6 credits in 595 and 598 (recital and document); 3 credits in music electives.

OPERA/MUSIC THEATER CONCENTRATION

Opera/music theater majors must have an undergraduate degree major in music with appropriate experience in opera or music theater, or in theater with additional music study sufficient to qualify in performance, theory, and history of music, and pronunciation competency in Italian, French, German, and English. Required courses include MUS 401-2, 402-2, 403-2; 470-3 or 471-3; 501-3; 502 a or b-2; 598-4; 440-540, 461, 472, 479c or 556-6; approved graduate level theater credits (6).

PIANO PEDAGOGY CONCENTRATION

Majors complete hours of credit in the following music courses: 501 (3); 440 or 540 (4); 498 (4) and 595 (2) or 498 (2,2) and 595 (2) or 498 (2) and 599 (4); 410 (2); 510 (2,2,2); 566 (1,1); approved music electives (3); approved non-music courses in fields of guidance and educational psychology, higher education, philosophy, and speech communication (4).

COLLABORATIVE PIANO CONCENTRATION

Students must have a BM in Piano Performance or Collaborative Piano. For the Vocal Emphasis in this concentration, proficiency in German, French and Italian is required equivalent to one year of college language study for each language. Majors complete MUS 501-3; 502 a or b (2); 8

credits in 530; MUS 454-2; 3 credits in music history (MUS 470 required for vocal emphasis; any other course from the 470 or 570 series for instrumental emphasis); MUS 566 (1, 1); MUS 479c, g (2,2) for vocal emphasis or MUS 479h, l (2, 2) for instrumental emphasis; MUS 598-4; MUS 595-2.

MUSIC EDUCATION CONCENTRATION

Majors complete MUS 501-3; 502a or b (2); 503 and 509; 5 hours of approved music education courses and 2 credits of approved music electives; 2 credits (1,1) from 566; 5 credits from the 470 and 570 series; 599-6 or 6 credits from 599 and 595; or 595 and 598.

General Information

Fees. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Music. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Fees are not charged for individual instruction, practice rooms, or instrument lockers. Instruments are loaned without charge when needed. Student expenses for music, textbooks, and other incidental supplies are usually nominal.

Advisement. The Director of Graduate Studies in Music supervises the overall planning of the student's program and designates the document or thesis director.

Diagnostic tests in music theory and history are given during orientation at the beginning of the fall semester and must be taken by all students at the first opportunity after admission. The student with weaknesses in certain areas may be asked to take additional work in those areas. A student will be accepted as a performance major in the Master of Music degree program after satisfactory audition in person, either before admission or during orientation. A performance major may be conditionally accepted on the basis of a tape recording; but a student accepted conditionally may be asked to audition in person during orientation or during the first term of residence, and may be required to register at the 400 level in performance until approved by personal audition. Current brochures from various performance areas and the *Graduate Handbook in Music* describe the level of repertory expected, audition procedures, and diagnostic tests.

NOTE: The B.A. degree does not provide the necessary prerequisites for graduate study in a Master of Music degree program.

Ensemble Requirement. All graduate students are required to register for MUS 566 (MUS 401, 402 or 403 may substitute for MUS 566 only for those students whose concentration is opera music theater) each semester of degree study (summers excepted). Participation is required each semester in one or more of the following: Marching Salukis, symphonic band, wind ensemble, symphony, choral union, concert choir, chamber singers, or guitar ensemble. In

addition, students may elect participation in other regularly scheduled ensembles. Graduate assistants assigned ensemble accompanying must register for alternate ensemble for credit. Petitions for exceptions to the ensemble requirement must be made in writing and presented to the School of Music graduate committee for consideration.

Exceptions to Degree Requirements. Appropriate substitutions in the curriculum for the Master of Music degree may be made if recommended by the student's adviser and approved by the graduate committee in music. Students who expect to earn more than half of their credits during summer terms only, or by a combination of summer attendance and night classes, may similarly propose a sequence of course offerings, following the above curricular patterns as far as possible. All curricula must meet Graduate School requirements and be approved by the graduate committee in music. Special summer students changing plans and registering for more than one regular fall or spring semester will ordinarily follow the appropriate standard curriculum.

The Thesis, Document, and Research Paper. With the exception of students in the Opera/Music Theater Concentration, all master's degree candidates will complete either (1) a thesis, or (2) a large, original composition or (3) a full recital performance and document.

No later than the beginning of the semester preceding the semester in which the student expects to graduate, the graduate coordinator, in consultation with the student, will designate a document or thesis director from the current list of graduate faculty from whom a student has taken graduate level courses. The document or thesis director guides the student's choice of topic and is responsible for the progress and quality of the resulting work. The document director normally heads the student's orals committee. Before any work is begun on the thesis or document, the student submits a proposal, together with a selective bibliography where applicable and the reactions of the document or thesis director, to the Director of Graduate Studies in Music for approval by the graduate committee. Changes of topic or of document director after initial approval must be approved by the music graduate committee.

Graduate Recital (598-4) is supervised by a jury of at least 3 members, headed by the student's instructor in performance. This jury approves the level of literature to be performed and acceptability of the performance by means of an audition in advance of the final performance.

Comprehensive Examinations. During the final semester of study, and after completion of the document or thesis, the student will take comprehensive examinations dealing with general areas of music and concentrations of music study, and, when appropriate, with the student's thesis or document. Application to take comprehensive examinations must be made at the beginning of the student's last semester of study. The examinations must be passed in time to meet Graduate School deadlines. Application for comprehensive examinations may not be made until all other re-

quirements, with the exception of terminal-semester courses, for the degree have been satisfied. A failed section of the comprehensive examinations may be taken again in a following term.

The oral examination committee, appointed by the Director Of Graduate Studies in Music, is headed by the student's document or thesis director with two or more faculty members with whom the student has had graduate level classes, as requested by the student. If the student has scheduled 6 or more hours in a department other than music, a member of this department will be invited to serve

Courses (MUS)

Courses in this department may require the purchase of music literature and other incidental supplies.

400-1 to 2 (1,1) Performance Techniques. Individual instruction in any secondary applied field. Designed to provide added depth of preparation for teaching instrumental and vocal music. Prerequisite: completion of 340 level or the equivalent in some field of applied music.

401-1 to 12 (1 to 2 per semester) Opera Workshop. Open to all appropriately experienced singers, actors, dancers, instrumentalists and theater technicians. Study of opera/opera repertoire and performance techniques. Prerequisite: consent of the instructor.

402-1 to 12 (1 to 2 per semester) Musical Theater Workshop. Open to all appropriately experienced actors, singers, dancers, instrumentalists and theater technicians. Study of musical theater/musical revue repertoire and performance techniques. Prerequisite: consent of the instructor.

403-1 to 16 (1 to 2 per semester) Lyric Theater Ensemble. A select group which performs operatic or musical theater literature, usually in the form of a fully mounted production each semester. Audition or consent of instructor. May be repeated for credit.

407-2 Modal Counterpoint. Study of Renaissance contrapuntal techniques. Extensive writing practice, and analysis of stylistic models. Prerequisite: 207.

410-2 Piano Pedagogy Practicum. Provides undergraduate and graduate piano pedagogy majors with the opportunity for supervised practice piano teaching. Course activities include lesson-planning, conducting and evaluating studio piano and class piano lessons, and a survey of important educational issues that impact on effective piano teaching. Prerequisite: consent of instructor.

421-2 Advanced Analysis. Structure, form, and design in music as the coherent organization of all of its factors. Analysis of works chosen from a variety of styles and genres. Prerequisite: 321.

440-1, 2, or 4 Applied Music. (Same as Music 040.) Offered at six levels in the areas listed below. May be repeated for credit as long as passing grade is maintained. Students must attend the weekly studio class and be concurrently enrolled in one of the performing groups. [Prerequisite for 040: satisfactory completion of beginning class instruction offered in that area, or the equivalent, and consent of instructor.] [Prerequisite: for 140: three or more

on the examining committee. The examination committee will conduct the student's oral examination and will supply questions for the student's written examination.

Three copies of all theses, thesis-composition manuscripts, and tapes and documents must be submitted in final form to the music graduate office at least 5 weeks before the intended date of graduation, carrying the approval of all members of the student's graduation committee. The graduate coordinator will forward 1 copy of a student's document (2, if a thesis) to the Graduate School and retain 1 copy.

years of prior study or performing experience, or two semesters of *C* or better at 040 level, and consent of instructor.] [Prerequisite: for 240, 340: two semesters of *C* or better at previous level, or consent of applied jury, and consent of instructor.] [Prerequisite: for 440, 540: two semesters of *B* or better at previous level, or consent of applied jury, and consent of instructor.] [Prerequisite: for (x) Acceptance to the BFA in Music Theater and consent of instructor. Applied music (x) not available to students pursuing other degrees in music.] Music majors and minors enroll for two credits on their principal instrument, taking one half-hour private lesson and studio class, Tuesdays at 10:00. Those with prior approval by their applied jury for the specialization in performance enroll for four credits, taking two half-hour private lessons and the student class each week. Non-music majors or minors, and those music majors taking a second instrument, enroll for one credit, taking one private or class lesson per week. Six hours of individual practice per week required for each lesson. For shorter sessions, credit is reduced or lesson time is increased proportionately. Instrumental maintenance/applied lesson fee: \$30.00.

a. Flute	n. Cello
b. Oboe	o. Double Bass
c. Clarinet	p. Voice
d. Bassoon	q. Piano
e. Saxophone	r. Organ
f. Horn	s. Harpsichord
g. Trumpet	t. Guitar
h. Trombone	u. Recorder
i. Euphonium	v. Coaching(540 W)
j. Tuba	w. Conducting(440W Only)
k. Percussion	x. Musical Theatre Voice
l. Violin	y. Collaborative Piano
m. Viola	

447-4 (2,2) Electronic Music. (a) Introduction to classical studio equipment and techniques; use of voltage controlled equipment. Individual laboratory experience available. (b) Emphasis upon creative projects, more sophisticated sound experimentation, and analysis. Enrollment limited. Must be taken in a,b sequence. Prerequisite: 280 or consent of instructor.

450-3 Topics in Ethnomusicology. Courses in this series are designed for advanced undergraduate and graduate students in music and related disciplines to the issues, theories, and interdisciplinary research methodologies of ethnomusicology. Prerequisites: junior/senior/graduate music major or consent of instructor.

450A-3 Women in Music (same as WMST 450A). Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Prerequisites: junior/senior/graduate music major or consent of instructor.

450B-3 Music and Social Change. Examines music as a force in movements for social change as well as music outside of formally identified movements serving this purpose. Seeks out musical sources and cultural meanings, along with connections between music in movements across time, space, culture, and genre. Prerequisites: junior/senior/graduate music major or consent of instructor.

452A-3 Traditions of Uppity Women's Blues (same as WMST 452A). Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conventions of gender and sexuality, racism, sexism, classism and homophobia. Prerequisites: junior/senior/graduate music major or consent of instructor.

452B-3 Blues and Boogie Woogie Piano Styles. Traces the history, culture, and stylistic developments of blues and boogie woogie piano. Explores socio-cultural contexts and examines key players, pieces, and musical styles. Prerequisites: junior/senior/graduate music major or consent of instructor.

453-2 to 4 (2 per semester) Advanced Topics in Choral Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. For experienced teachers and advanced students.

454-2 to 4 (2 per semester) Advanced Topics in Instrumental Music. Practicum in the selection, rehearsal, and performance of appropriate literature. Study of techniques for achieving proficient performance and musical growth. Designed for experienced teachers and advanced students.

455-2 to 4 (2 per semester) Advanced Topics in Elementary School Music. Practicum in the selection and use of materials for the elementary school program. Study of techniques for achieving balanced musical growth. For experienced teachers and advanced students.

456-4 (2,2) Music for Exceptional Children. (a) Theories and techniques for therapeutic and recreational use of music with physically and mentally handicapped children. Includes keyboard, autoharp, guitar and tuned and untuned classroom instruments. (b) Applications for the gifted, emotionally disturbed, and culturally disadvantaged child. Take in sequence. Prerequisite: 302 or prior consent of instructor.

461-3 Applied Music Pedagogy. Specialized problems and techniques employed in studio teaching of any particular field of music performance. Study of music literature appropriate for the various levels of performance. Opportunity, as feasible, for supervised instruction of pupils. Meets with appropriate instructor, individually or in groups.

468-2 to 4 (2,2) Music Productions. Practicum in the techniques for staging operas and musicals.

470-3 History of Opera. The development of the music, libretti, and staging of opera from the late Renaissance to the present. Prerequisite: 357b, or consent of instructor.

471-3 History of Musical Theater. The development of the music, book, lyrics and staging practices of musical theater from its late 19th century beginnings to present, with a detailed study of selected contributors and their works. Restricted to: BFA or MM Opera/ Music Theater majors only, or consent of instructor.

472-3 Chamber Music Literature. A study of literature for the principal types of chamber music groups.

475-3 Baroque Music. The development of vocal and instrumental music in the period 1600-1750, from Monteverdi to Bach and Handel. Oratorio and Cantata, the influence of opera, sonata, suite and concerto. Prerequisite: 357a with a grade of C or better, or graduate standing.

476-3 Classical Music. Development of the sonata, symphony, concerto, and chamber music in the 18th and early 19th centuries, with emphasis on the music of Haydn, Mozart and Beethoven. Prerequisite: 357b with a grade of C or better, or graduate standing.

477-3 Romantic Music. Development of the symphony and sonata forms, chamber music, and vocal music in the 19th and early 20th centuries. Rise of nationalism and impressionism. Prerequisite: 357b with a grade of C or better, or graduate standing.

478A-3 Modern Music. Examine important works and figures from Western Music in the second half of the 20th Century. Included will be atonality, serialism, avant-garde, minimalism, electronic music, experimental instruments and indeterminacy. Emphasis placed on the social, economic and political context. Students will examine the compositional philosophies and techniques of the era. Prerequisite: MUS 357b with grade C or better or instructor consent.

478B-3 Modern Music II. Examine important works and figures from Western Music in the second half of the 20th Century. Included will be atonality, serialism, avant-garde, minimalism, electronic music, experimental instruments and indeterminacy. Emphasis placed on the social, economic and political context. Students will examine the compositional philosophies and techniques of the era. Prerequisite: MUS 357b with grade of C or better or instructor consent.

479-2 to 4 (2 per topic) Solo Performance Literature. Topics presented will depend upon the needs of students and upon instructors scheduled. (a) Piano literature I, including an introductory study of harpsichord music; (b) Organ literature, in relation to the history of the instrument; (c) Song literature; (d) Guitar and lute literature; (e) Solo

string literature; (f) Solo wind literature; (g) Percussion Literature, Examination of the emergence and development of percussion literature in Eurocentric music, 1900 to present, including the aesthetic, political, economic, and social factors. (h) song literature- French, Italian, 20th Century/other Art song; (i) piano literature II. Prerequisite: Consent of instructor.

480-2 to 4 (2,2) Advanced Composition. Original composition involving the larger media. Individual instruction. Prerequisite: two semesters of 380 with a grade of C or better and approval of composition jury.

481-1 to 4 Readings in Music Theory. Assigned readings and reporting of materials pertaining to a particular phase of music theory in historical perspective. Approximately three hours' preparation per week per credit (adjusted for shorter sessions). Prerequisite: 321 and 322 or prior consent of instructor.

482-1 to 4 Readings in Music History and Literature. Assigned readings and reporting of materials pertaining to a particular phase of history or literature. Approximately three hours preparation per week per credit. Prerequisite: 357a and b, or prior consent of instructor.

483-1 to 4 Readings in Music Education. Assigned readings and reporting of materials pertaining to a particular phase of music education. Approximately three hours preparation per week per credit (adjusted for shorter sessions). Prerequisite: consent of instructor.

498-2 to 4 (2,2) Recital. Preparation and presentation of a full solo recital in any applied field. Prerequisite: prior or concurrent registration in 440 and approval of applied jury.

499-1 to 8 Independent Study. Original investigation of selected problems in music and music education with faculty guidance. Project planned to occupy approximately three hours preparation per week per credit (adjusted for shorter sessions). Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of selected instructor.

500-1 to 6 Independent Investigation. An opportunity for the graduate student to investigate at an advanced level special interests outside the scope of normal course offerings. The student will select a member of the graduate faculty to guide and evaluate the work. Not more than three hours toward 30 required for graduate degree. Prerequisite: prior consent of the selected instructor and student's graduate adviser.

501-3 Music Bibliography and Research. Bibliographic materials for graduate study in music theory, history, education, and music performance. Practical experience in research techniques and scholarly writing style. Recommended to be taken during the first semester of graduate study. Required of all degree programs.

502A and B-2 Analytic Techniques. (A) Study of the analytical techniques of Heinrich Schenker through analysis of representative works from the common practice period. Prerequisites: MUS 321 or equivalent and graduate standing in music. (B) Study of post-tonal music theories - including Allen Forte's pitch-class set theory and twelve-tone theory - through analysis of representative 20th and 21st

century works. Prerequisite: MUS 322 or equivalent and graduate standing in music.

503-3 Scientific Evaluation and Research in Music. Quantified research concepts and vocabulary; measurement theory and techniques for evaluating and testing musical aptitude and achievement; investigation of acoustical perception; survey of current scientific research in music. A research project is required.

509-2 History and Philosophy of Music Education. The evolution of school music and its changing relationship to the individual, to society and to the school curriculum.

510-6 (2,2,2) Piano Pedagogy Seminars. (a) Piano Technique. Provides an in-depth study of the three classic texts on the subject of piano technique and prepares students to deal with important aspects of piano technique in piano teaching. (b) Piano Literature. An extensive survey of baroque, classical, romantic and contemporary piano literature designed specifically to meet the needs of those pursuing professional careers as piano teachers. (c) Piano Music Analysis. Details the analytic and problem-solving techniques of piano performance study that are fundamental for teaching piano students of all ages and abilities.

535-2 Contemporary Idioms. An analysis of major compositional techniques since 1945. Prerequisite: 502b or consent of instructor.

540- 2 or 4 Applied Music. (See Music 440.) Instrumental maintenance/applied lesson fee: \$30. Prerequisite for (x): Acceptance to the BFA in Music Theater or the MM in Opera/Music Theater. Applied music (x) not available to students pursuing other degrees in music.

545-3 Pedagogy of Music Theory. An orientation to the philosophy of theory with application to teaching techniques. Prerequisite: consent of instructor.

550-2 School Music Administration and Supervision. Study of the objectives and processes of music instruction. Administration roles in developing the means and ends of music instruction, and techniques employed for the improvement of instruction.

556-2 to 4 (2,2) Advanced Conducting. Individual or group study with appropriate instructor of choral, orchestral, or band literature. Practice in score reading, baton technique and interpretation. Opportunity to rehearse and conduct ensembles when feasible. Prerequisite: completion of an undergraduate conducting course with graduate standing in music, or consent of instructor.

566-1 to 12 (1 or 2 per semester) Jazz Ensemble. Participation required each semester enrolled (summer excepted) in one or more of the ensembles listed below. Students may elect participation in other regularly scheduled ensembles. One credit per group: maximum of two credits for concurrent participation in two groups. Restricted to: Consent of instructor (a) Marching Salukis. (b) Symphonic band. (c) Concert wind ensemble. (d) Symphony. (e) Choral union. (f) Concert choir, (g) Chamber singers. (h) Guitar ensemble. (i) Opera workshop (j) Jazz ensemble. Restricted to: Consent of Instructor.

573-3 Medieval Music. Music of the medieval world; Gregorian chant; the Tropes; secular songs of the troubadours

and trouveres; the rise of polyphony; Ars Antiqua; organum and conductus; Ars Nova; Dunstable and English descant up to about 1450; types of notation. Prerequisite: for non-music majors: prior consent of instructor.

574-3 Renaissance Music. Burgundian and Netherlands music from 1450 and its spread; Isaac and Josquin; 16th Century polyphony in France, Germany, Spain, and England; the rise of music for instruments and for solo voices. Prerequisite: for non-music majors: prior consent of instructor.

580-2 to 4 (2,2) Graduate Composition. Composition in the larger forms for solo and ensemble performance. Prerequisite: 480 or prior consent of instructor.

595-2 Music Document. A written report presenting the history and style of works performed in graduate recital, Music 598, or other topic relating to the student's principal performing area or independent study project. Prerequisite: 501 and approval of topic by the music graduate committee. On recommendation of the composition faculty and with graduate committee approval, a piece of music composed by the student for performance in Music 598 may be substituted, accompanied by a written analysis.

598a-4 Graduate Recital. Preparation and presentation of a full solo recital in any area of performance; or the preparation, rehearsal, and conducting of a full ensemble program or of the equivalent sections of several ensemble programs. Prerequisite: completion of at least four credits in 540 (or 556 for conductors) and the approval of the performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee.

598i-1 to 3 (1 or 2 per semester) Preparation and presentation of a full recital with an instrumentalist. Restricted to: Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee.

598-v-1 to 3 (1 or 2 per semester) Preparation and presentation of a full recital with a vocalist. Prerequisite: Collaborative Piano majors only. Approval of performance jury. The performance jury certifies the acceptability of the completed recital and the grade to the graduate committee..

599-2 to 6 Thesis. An intensive written study in the history, theory, teaching or philosophy of music; or the manuscript and parts (with tape recording when feasible) of a substantial musical composition or series of compositions accompanied by an analytical or explanatory document. Graded *S/U* or *DEF*. Prerequisite: 501 and prior approval of topic or proposal by thesis director and graduate committee in music.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

PHARMACOLOGY AND NEUROSCIENCE

www.siumed.edu/pharm/

lmoss@siu.edu

SCHOOL OF MEDICINE

Graduate Faculty:

Arai, Amy C., Associate Professor, Ph.D., (Springfield), Chiba University, 1987; 1999. Molecular and pharmacological modulation of AMPA-type glutamate receptors and its impact on synaptic physiology.

Browning, Ronald A., *Emeritus* Professor, Ph.D., University of Illinois Medical Center, Chicago, 1971; 1973.

Caspary, Donald M., *Distinguished Professor*, Ph.D., (Springfield), New York University, 1971; 1973. Sensory physiology, neurophysiology, neuroanatomy, comparative physiology.

Copello, Julio A., Assistant Professor, Ph.D., (Springfield), National University of La Plata, 1989; 2005. Physiological and pharmacological modulation of ryanodine receptors/calcium release channels and its impact on excitation-contraction coupling of skeletal muscle and heart.

Dunaway, George A., Professor, *Emeritus*, Ph.D., (Springfield), University of Oklahoma, 1970; 1975.

Elble, Randolph C., Assistant Professor, Ph.D., (Springfield), Indiana University, 1986; 2005. Tumor suppression in breast cancer by CLCA family of chloride current regulators.

Faingold, Carl L., *Distinguished Professor and Chair*, Ph.D., (Springfield), Northwestern University, 1970; 1972. Convulsive seizure mechanisms and effects of anticonvulsants; pharmacological alterations of cerebral evoked potentials.

Lee, Tony, J-F., Research Professor, *Emeritus*, Ph.D., (Springfield), West Virginia University, 1973; 1975.

Means, Jay C., Professor and *Dean of the College of Science*, Ph.D. DABT, University of Illinois-Urbana, 1976, 2007, Toxicology and Analytical Chemistry.

Premkumar, Louis S., Associate Professor, Ph.D., (Springfield), Australian National University, 1992; 1999. Molecular neurobiology, molecular mechanism(s) underlying pain perception; structure and function of ion channels.

Ramkumar, Vickram, Associate Professor, Ph.D., (Springfield), University of Maryland, 1986; 1992. Molecular pharmacology of adenosine receptors in cardiovascular system and central nervous systems.

Rybak, Leonard P., Professor, M.D., Ph.D., (Springfield), University of Minnesota, 1973; 1981. Investigation of mechanisms controlling ionic composition and resting potentials in the peripheral auditory apparatus using chinchilla model.

Tischkau, Shelley A., Assistant Professor, Ph.D., (Springfield), University of Illinois at Urbana-Champaign, 1995; 2007. Exploring molecular and neurological bases that underlie whole animal physiological processes, neurotoxicity, circadian rhythms and environmental toxicology.

Toth, Linda A., Professor, Ph.D., D.V.M., (Springfield), University of Pittsburgh, 1980; Purdue University, 1986; 2000. Sleep, genetics, neuroimmunology.

Turner, Jeremy, Assistant Professor, Ph.D., (Springfield), Northern Illinois University, 1999; 2002. Age-related hearing loss, tinnitus, animal models of hearing loss.

Uteshev-Gaard, Victor V., Assistant Professor, Ph.D., (Springfield), University of Toronto, 1997; 2006. Cellular and molecular mechanisms, neuronal functions and signaling under physiological and pathophysiological conditions.

Graduate courses of study leading to the Master of Science and Doctor of Philosophy degrees in Pharmacology and Neuroscience are offered by Southern Illinois University School of Medicine, Department of Pharmacology. Course offerings in the graduate program have been designed so that graduate students may acquire a broad basic knowledge as well as research experience in different areas of Pharmacology and Neuroscience. Graduate students may choose from a diversity of specializations when selecting a research advisor and a research topic.

The minimum requirements for admission to an advanced degree program in Pharmacology and Neuroscience are that all students must have an undergraduate degree in one of the biological sciences. Students may be admitted with deficiencies in these prerequisites, but they must remedy them at an accredited University which is approved by the Graduate School prior

to completion of PHRM 550a and b. Students with undergraduate training in related areas, such as chemistry, physics, mathematics, computer science, psychology, or engineering are strongly encouraged to consider graduate work in Pharmacology and Neuroscience.

Unrestricted admission into the master's program requires an undergraduate grade point average (GPA) of 3.0 ($A = 4.0$). For unrestricted admission into the doctoral program, a GPA of 3.25 ($A = 4.0$) on all course work is required. Specific requirements are described in the sections, "Specific Requirements for a Master of Science Degree in Pharmacology and Neuroscience" and "Specific Requirements for a Doctoral Degree in Pharmacology and Neuroscience."

In addition to the above general requirements, each applicant must submit *directly to the Department of Pharmacology*:

1. A completed application, including a *nonrefundable* \$50.00 application fee that must be submitted with their application for Admission to Graduate Study in Pharmacology and Neuroscience. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.
2. Original official transcripts for all undergraduate and graduate coursework sent directly from each university or college attended by the applicant.
3. A Career Statement (250 words or less) describing the career path that the applicant intends to pursue upon completion of the graduate study.
4. A Statement of Area Research Interest (250 words). This statement should include the names of 2-3 Pharmacology Department faculty members whose research interests are most aligned with those of the applicant, as well as specific reasons for this selection. The faculty research interests can be found on the Department of Pharmacology Website.
5. Scores of the Graduate Record Examination (GRE) sent directly from the testing agency.
6. Three letters of recommendation from faculty familiar with the applicant's potential.
7. A copy of the TOEFL scores (international students only) sent directly to the Pharmacology and Neuroscience Program Director in Springfield.
8. A resume or curriculum vitae.

Equivalent course work completed at other institutions or in other collegiate units may be substituted for certain course requirements for graduate course work in Pharmacology and Neuroscience if approved by the Pharmacology and Neuroscience Graduate Program Committee and the Graduate School.

Performance Requirements to Maintain Student Status

Master's Degree. An overall GPA of 3.0 ($A = 4.0$) in all graduate work in the program is required to remain in the program. Any grade below *B* in a Pharmacology and Neuroscience core course must be compensated for by retaking the course and earning an *A* or *B* grade.

Doctor of Philosophy Degree. An overall GPA of 3.0 ($A = 4.0$) in all graduate work in the program is required to remain in the program. Any student who makes a grade below *B* in a Pharmacology and Neuroscience core course will not be allowed to remain in the Ph.D. program of the Department of Pharmacology, but may be considered for a master's degree

Financial Assistance

The Pharmacology and Neuroscience Graduate Program offers financial assistance that includes tuition waivers. Research assistantships and departmental fellowships are available; application for this support is made directly to the

Department of Pharmacology. The Graduate School governs limits on support.

Graduate students should be aware that renewal of support in the form of a research assistantship or fellowship is contingent upon satisfactory performance evaluations. Performance is documented in an annual progress report and is evaluated by the student's advisor and the Graduate Program Committee. Failure to meet the requirements may lead to termination of support. The performance evaluation considers both assigned duties relevant to graduate assistantships and progress in coursework and research.

General Curriculum Requirements Common to the Master's and Ph.D. Degrees in Pharmacology and Neuroscience

All graduate students are required to complete formal course work in two areas: (1) core courses and (2) electives.

The core courses are PHRM 500, 501 (Pharmacology Seminar; all graduate students are required to participate every Fall and Spring semester), PHRM 550a and b (Principles of Pharmacology), PHRM 577 (Neuroscience). In addition doctoral students are also required to successfully complete PHRM 530 (Advanced Pharmacology and Neuroscience). Maximum coursework for full-time graduate students is 16 hours per semester; 12 hours is considered average. For a student with a half-time assistantship, 12 hours is the maximum, and 6 hours is the minimum.

All graduate students must acquire training in the use of appropriate research tool(s) as required by the Graduate School and determined by the graduate student's thesis/dissertation committee. All students are required to attain competence in Responsible Conduct in Research (PHRM 540). Students are also required to complete research tools, at least two for doctoral students and at least one for master's students.

Students may fulfill the requirements for a research tool by taking any of the following courses: Statistics (PHRM 552), Research Methods (MBMB 504), or Methods in Pharmacology (PHRM 551). Students may also attain competence by formal training, or by demonstrating competence in another manner acceptable to the graduate student's thesis/dissertation committee.

An advisory system in Pharmacology and Neuroscience will help students in planning their program. Upon their admission to the Master's or Doctoral program, the Pharmacology and Neuroscience Graduate Program Director will advise students until the student chooses a research advisor. The programs outlined by students, their advisors and their thesis/dissertation committees are subject to approval by the Pharmacology and Neuroscience Graduate Program Committee. The choice of advisor and the formulation of the thesis/dissertation committee is an important step and should be carefully

considered. Students are encouraged to choose an advisor as soon as possible.

As soon as a graduate student has selected a research advisor, a thesis/dissertation committee should be formed. The thesis committee for a student in the Master's program will consist of a minimum of four members: the student's research advisor (chair), two faculty members from the Department of Pharmacology and one faculty member from an outside department. The dissertation committee for a student in the Doctoral program will consist of a minimum of five members: the student's research advisor (chair), two or three faculty members from the Department of Pharmacology, and one or two faculty members from outside the department. Members of this committee should be able to contribute significantly in the area of the student's research program. The student's research advisor, acting through the Graduate Program director and Chair of the Department of Pharmacology, will request approval of this committee from the Dean of the Graduate School. The Chair of the Department of Pharmacology and the Graduate Program Director are ex-officio members for all thesis/dissertation committees of which they are not formal members.

Specific Requirements for a Master of Science Degree in Pharmacology and Neuroscience

GENERAL REQUIREMENTS

1. A minimum of two- years of full-time study (1 year in residence) is required for a master's degree.
2. A total of 30 semester hours at the 400 and 500 level is required for a master's degree. At least 15 of these hours must be in 500-level courses, 6 hours which should be of PHRM 599.
3. A written comprehensive examination must be passed with at least a grade of *B*. It will be prepared, conducted, and evaluated by the Pharmacology and Neuroscience Graduate Program Committee and will be given upon completion of the major core course work. This examination will become a part of the student's permanent file.
4. Before significant research has begun, a thesis plan is required. The thesis plan will be presented and discussed in an informal meeting with thesis committee members and interested faculty. The cover sheet for the graduate student's thesis plan must be signed by all members of the student's thesis committee and filed with the graduate program director.
5. A thesis must be completed in the student's research area of interest and receive approval of the student's thesis committee. The thesis is expected to be a competent, original research project carried out in a selected area under the research advisor's supervision. It should include a statement of the problem, an adequate review of literature, a careful analysis of results by whatever appropriate methods, and an interpretation of the findings. The student must submit a preliminary draft of the thesis to the advisor at least ten weeks prior to graduation. A corrected copy must be submitted to other members of the thesis committee no later than eight weeks before graduation.
6. Results of the thesis research must be defended in a pharmacology seminar which must be announced at least four weeks in advance by sending out proper notices. Immediately following the seminar, an oral examination will be conducted by the student's thesis committee. Any member of the university community may attend this examination and may participate in the questioning and discussion, subject to reasonable time limitations imposed by the committee chair. Only committee members may vote or make recommendations concerning acceptance of the thesis and the oral examination.
7. The student will be recommended for the degree if members of the student's thesis committee judge both the thesis and the performance at the oral examination to be satisfactory. Evaluation forms will be completed by the student's thesis committee. If approved, a thesis approval form will be completed, signed by the student's major advisor and the chair of the Department of Pharmacology, and transmitted to the Graduate School. The oral examination may be repeated once, no sooner than three months after the first examination. A second failure will result in dismissal from the Pharmacology and Neuroscience graduate program.
8. Each student is required to have 6 semester hours of PHRM 599, Thesis Research. Each student who has completed all course work and registered for the minimum of thesis research hours is required to register in PHRM 601 (Continuing Research) until completion of the degree.
9. It is the student's responsibility to give two appropriate unbound copies of the thesis to the Graduate School. One bound copy should be provided to the Graduate Program Director and one to the advisor at least three weeks prior to graduation.
10. Below is a representative schedule for completion of the requirements for the Master's Degree in Pharmacology and Neuroscience. Students are strongly encouraged to begin research as soon as possible by taking PHRM 590. In addition to the core courses, the following elective courses will be offered. Students should take at least one elective course.

Elective courses:

PHRM 590	Readings or Research in Pharmacology(entire year)	1-24
MBMB 530	Molecular and Cellular Biology (Spring)	3
PHRM 560	Geriatric Pharmacology	3
PHRM 565	Principles of Toxicology	3
PHRM 577	Neuropharmacology	3
MBMB 555	Cardiovascular Pharmacology	3
MBMB 560	Molecular Oncology	3
Or other 500 level courses		

Research Tools:

PHRM 552	Applied Statistics	3
MBMB 504	Research Methods (Fall)	3
PHRM 551	Methods in Pharmacology	4
PHRM 540	Responsible Conduct of Research	1

First YearCredits

Fall Semester		
PHRM 550a	Principles of Pharmacology	4
PHRM 577	Neuroscience	4
PHRM 501	Introduction to Seminar	1
MBMB 504	Research Methods	3
Total		12

Spring Semester

PHRM 550b	Principles of Pharmacology	4
PHRM 551	Methods of Pharmacology	4
PHRM 590	Research in Pharmacology	2
PHRM 501	Introduction to Seminar	1
MBMB 531	Molecular and Cellular Biology	3
Total		14

Summer Session*Choose Advisor and form thesis committee*

PHRM 590	Readings or Research in Pharmacology	6
Total		6

*Preliminary Examination - Written Comprehensive Exam*Second YearCredits

Fall Semester		
PHRM 501	Introduction to Seminar	1
PHRM 552	Applied Statistics	3
PHRM 590	Readings or Research in Pharmacology	4
HRM 599	Thesis Research	3
PHRM 540	Responsible Conduct of Research	1
Total		12

Spring Semester

PHRM 501	Introduction to Seminar	1
PHRM 590	Readings or Research in Pharmacology	8
PHRM 599	Thesis Research	3
	<i>Thesis Defense</i>	
Total		12

SUMMARY OF REQUIREMENTS FOR MASTER OF SCIENCE DEGREE

1. Achievement of a grade point average of at least a 3.0 ($A = 4.0$)
2. Completion of a research tool as required by the Graduate Program and the thesis committee
3. Comprehensive written exam of course work
4. Informal thesis proposal presentation with thesis committee
5. Interim meeting with thesis committee to review progress
6. Submission of thesis to advisor (10 weeks prior to graduation)
7. Corrected thesis to thesis committee (8 weeks prior to graduation)
8. Announcement of thesis defense (4 weeks prior notice)
9. Oral defense of thesis
10. Submission of approved thesis to Graduate School (2 copies), graduate program director (1 copy), and advisor (1 copy) 3 weeks prior to graduation
11. Submission of department clearance form

Specific Requirements for a Doctor of Philosophy Degree in Pharmacology and Neuroscience**GENERAL REQUIREMENTS**

1. Students entering the Ph.D. program in Pharmacology and Neuroscience should meet the minimum requirements listed for the Master's degree program. Students entering the doctoral program in Pharmacology and Neuroscience may be admitted directly from a master's program.
2. The *Accelerated Entry* (from a master's program) is designed for students who make an early commitment to pursuing a doctoral degree. The Pharmacology and Neuroscience Graduate Program recommends this option after the student's credentials, eligibility, and performance have been reviewed. To be eligible for this option, (1) the student must have attained a 3.25 ($A = 4.0$) GPA in graduate course work, (2) the student must have successfully completed the core courses with a grade of 'B' or better and (3) an advisor with whom the student will work toward his/her degree should submit a letter of recommendation attesting to the student's ability and potential to perform doctoral research. Approval of the review must be given by the Department of Pharmacology faculty and chair. The Chair of the Department will then request from the Graduate School a waiver of the master's degree or master's equivalency before entry into the doctoral program. The student's advisor and the Graduate Program Committee will establish specific course work requirements for the Ph.D. degree in accordance with the requirements of the program.

3. The Ph.D. degree may not be conferred fewer than six months nor more than five years after admission to candidacy, except upon approval of the Dean of the Graduate School. The student is admitted to the Ph.D. candidacy after having completed the residency requirement, the research tool requirement, and the comprehensive written preliminary examination.
4. A comprehensive written preliminary examination of course work must be passed with a grade of *B* or better. It will be prepared, conducted, and evaluated by the Pharmacology and Neuroscience Graduate Program Committee and will be given after completion of the core courses, typically during the Summer session. This examination will become a part of the student's permanent file. The preliminary examination may be repeated only once, no sooner than three months after the initial examination. Most course work should be completed prior to this examination, but this examination should precede the greater part of the dissertation research.
5. A dissertation proposal is required before the student begins significant research. The dissertation proposal will be presented as a Pharmacology seminar. Immediately following this seminar, the proposal will be defended orally before the student's dissertation committee. The cover sheet for the graduate student's dissertation committee must be signed by all members of the student dissertation committee and filed with the Graduate Program Director. The student is required to meet formally with the dissertation committee at least once between defense of the proposal and the dissertation. The purpose of this interim meeting is to review progress and to modify the planned experiments, if deemed necessary based on assessment of data collected as of that date. Results of the dissertation research should be published in peer-reviewed journals with the doctoral candidate as first author. Students must have at least one paper submitted for publication and are encouraged to obtain two or more publications from the graduate research work. The dissertation committee and/or the Graduate Program Committee will ask the student to delay the defense if this requirement is not fulfilled. The dissertation defense presentation will occur no earlier than one year after the dissertation proposal defense and after at least one paper has been submitted for publication. The dissertation is expected to be a competent, original research project that will make significant contribution to the body of scientific knowledge. As such, it should be of sufficient quality to merit publication in a peer-reviewed journal. It should include a statement of the problem, an adequate review of literature, a careful analysis of results by whatever methods are appropriate, and an interpretation of the findings.
6. The residency requirement for the doctorate must be fulfilled after admission to the doctoral program and before formal admission to doctoral candidacy. The residency requirement is satisfied by completion of 24 semester hours of graduate credit on campus as a doctoral student within a period of not to exceed 4 calendar years. A doctoral student will be permitted to count no more than 6 hours of Dissertation Research (PHRM 600) towards achieving the 24 semester hour residency requirement. To meet the residency requirement, students may enroll in any other course that they have not taken that meets with the approval of their advisor and dissertation committee, e.g. any formal departmental or non-departmental courses, and Readings or Research in Current Pharmacological Topics (PHRM 590).
7. The Graduate School requires completion of the residency requirement before making application to candidacy. Admission to candidacy is granted by the dean of the Graduate School upon recommendation of the student's dissertation committee or the Graduate Program after the student has fulfilled the residency requirement for the doctoral degree, passed the comprehensive written preliminary examination and met the research tool requirement. The candidate must fulfill all degree requirements within a five-year period after admission to candidacy, otherwise the student may be required to take another preliminary examination and be admitted to candidacy a second time.
8. After admission to candidacy, the student must complete 24 hours of dissertation credit, (PHRM 600), complete the dissertation research project, and prepare the dissertation document to meet the requirements of the dissertation committee and the Graduate School. A student who has completed all formal course work, dissertation and candidacy credit requirements but has not completed and defended the dissertation must register for PHRM 601 (Continuing Research) until completion of the degree.
9. A preliminary draft of the dissertation should be given to the advisor at least ten weeks prior to graduation; a corrected copy should be submitted to other committee members no later than eight weeks before graduation.
10. Results of the dissertation research must be defended in a Pharmacology seminar which must be announced at least four weeks in advance by sending out proper notices. Immediately following the pharmacology seminar, a final oral examination will be conducted covering the dissertation subject and other discipline related materials. Any member

of the university community may attend the final oral examination and may participate in the questioning and discussion, subject to reasonable time limitations imposed by the committee chair. Only members of the committee may vote or make recommendations concerning acceptance of the dissertation and final examination. A student will be recommended for the degree if members of the dissertation committee judge both the dissertation and the performance at the final examination to be satisfactory. Evaluation forms will be completed by the committee. If approved, a dissertation approval form will be completed, signed by the student's major advisor and the Chair of the Department of Pharmacology, and submitted to the Graduate School. The examination may be repeated once, no sooner than three months after the first examination. Failure of the second examination will result in dismissal from the pharmacology graduate program.

11. It is the student's responsibility to give two unbound copies of the dissertation to the Graduate School, along with an abstract of 600 words or less. One bound copy should be given to the graduate program director and one to the student's advisor at least three weeks prior to graduation. All dissertations will be microfilmed. The student will be charged for this service. The student will be charged for this service.
12. Below is a representative schedule of the requirements for the Ph.D. degree in Pharmacology and Neuroscience (accelerated entry from master's course). Note that alternative scheduling is available for those students who already have a Master of Science degree in Pharmacology and Neuroscience. In addition to the core courses, the following advanced and elective courses will be offered. Students should take two advanced pharmacology courses and one elective course. Students are also strongly encouraged to start research as soon as possible by taking PHRM 590.

Elective courses:

PHRM 590	Readings or Research in Pharmacology (entire year)	1-24
MBMB 504	Research Methods (Fall)	3
MBMB 531	Molecular and Cellular Biology (Spring)	3
PHRM 574	Neuropharmacology	3
PHRM 555	Cardiovascular Pharmacology	3
PHRM 560	Geriatric Pharmacology	3
PHRM 565	Principles of Toxicology	3
MBMB 560	Molecular Oncology	3

Research Tools:

PHRM 552	Applied Statistics	3
MBMB 504	Research Methods (Fall)	3
PHRM 551	Methods in Pharmacology	4
PHRM 540	Responsible Conduct in Research (Fall) 1	

First Year

		<u>Credits</u>
Fall Semester		
PHRM 550a	Principles of Pharmacology	4
PHRM577	Neuroscience	4
MBMB 504	Research Methods	3
PHRM 551	Methods in Pharmacology	4
PHRM 501	Introduction to Seminar	1
Total		16

Spring Semester

		<u>Credits</u>
<i>Choose Advisor</i>		
PHRM 550b	Principles of Pharmacology	4
PHRM 530	Advanced Pharmacology and Neuroscience 3	
PHRM 590	Research in Pharmacology	2
PHRM 501	Introduction to Seminar	1
MBMB 531	Molecular and Cellular Biology	3
Total		13

Summer Session

<i>Preliminary Exam</i>		
<i>Choose Advisor and form Dissertation Committee</i>		
PHRM 590	Readings or Research in Pharmacology	6
Total		6

Second Year

Fall Semester		
PHRM 552	Applied Statistics	3
PHRM 590	Research in Pharmacology	5
PHRM 600	Dissertation Research	3
PHRM 501	Introduction to Seminar	1
Total		12

Spring Semester

PHRM 501	Pharmacology Seminar	1
PHRM 590	Research in Pharmacology	8
PHRM 600	Dissertation Research	3
<i>Admission to Candidacy when eligible</i>		
Total		12

Summer Session

PHRM 600	Dissertation Research	6
Total		6

After Second Year

		<u>Credits</u>
Fall Semester		
PHRM 600	Dissertation Research	9
PHRM 500	Pharmacology Seminar	1
Total		10

Spring Semester

PHRM 600	Dissertation Research	11
PHRM 500	Pharmacology Seminar	1
<i>Completion of residency requirements for Ph.D.</i>		
Total		12

Summer Session

PHRM 600	Dissertation Research	6
Total		6

SUMMARY OF REQUIREMENTS FOR DOCTOR OF PHILOSOPHY DEGREE

1. Achievement of a grade point average of at least 3.00 ($A = 4.0$)
2. 24 semester hours residency
3. Completion of research tools required by Graduate Program and Dissertation Committee
4. Comprehensive written preliminary exam of course work
5. Completion of 4 semester hours of PHRM 501 with a grade of *B* or better
6. Admission to candidacy
7. Oral defense of dissertation proposal
8. Interim meeting with dissertation committee to review progress
9. Submission of dissertation to advisor with copies of publications or submitted manuscripts (10 weeks prior to graduation)
10. Corrected dissertation to dissertation committee (8 weeks prior to graduation)
11. Completion of an approved dissertation with 24 hours of dissertation credit
12. Announcement of dissertation defense (4 weeks prior notice)
13. Oral defense of dissertation
14. Submission of approved dissertation to Graduate School (2 copies), graduate program office (1 copy), and advisor (1 copy) 3 weeks prior to graduation
15. Submission of departmental clearance form
16. All dissertations shall be microfilmed and a fee is required

COURSES (PHRM)

500-1 to 16 Pharmacology Seminar. Presentation of research and current literature in pharmacology. Required of all graduate students in pharmacology after completion of four credit hours of 501. Requires presentation at a Journal Club session each fall semester and a formal seminar each spring semester for duration of registration. Graded *S/U* only. Prerequisite: 501. (Springfield Only.)

501-1 to 4 (1 per semester) Introduction to Seminar. Training in interpretation of research and current literature in order to enhance quality of seminar presentation. Enrollment for the initial four semesters is required of all beginning pharmacology graduate students. All other pharmacology graduate students must enroll in 500. (Springfield Only.)

530-3 Advanced Pharmacology & Neuroscience. The goal of this course is to understand the process involved in scientific discovery and research by reading, analyzing, criticizing and discussing scientific articles covering the field of Pharmacology and Neuroscience and the related field of cellular and molecular biology. Prerequisites: PHRM550 A&B Principle of Pharmacology and PHRM 577 Neuroscience.

540-1 Responsible Conduct of Research. This course will provide information on topics relevant to the ethical conduct of research, including conflict of interest, publication policies, animal and human subjects, peer review, and mentoring. No prerequisite.

550A-4 Principles of Pharmacology. A study of chemistry, pharmacodynamic actions, mechanisms of action, absorption, distribution, metabolism, elimination, adverse effects, interactions and toxic effects of drugs currently used in therapeutics. Three to five hours lecture, one to four hours discussion per week. PHRM 550A mainly focuses on the drugs for the CNS and the autonomic system. No prerequisite required.

550B-4 Principles of Pharmacology. A study of chemistry, pharmacodynamic actions, mechanisms of action, absorption, distribution, metabolism, elimination,

adverse effects, interactions and toxic effects of drugs currently used in therapeutics. Three to five hours lecture, one to four hours discussion per week. PHRM 550B covers the drugs for the endocrine system, the immune system and cancer. Must be taken in sequence. No prerequisite required.

551-4 Methods in Pharmacology. The main objective is to acquaint the student with various sophisticated laboratory equipment, basic techniques/principles of pharmacological experiments. One hour lecture and three hours laboratory twice weekly. This course is prerequisite to all advanced pharmacology courses. (Springfield Only.)

552-3 Applied Statistics for the Basic Sciences. This course reviews introductory statistics and focuses on advanced statistics, linear and nonlinear modeling, applicable to basic biomedical sciences. The course will also provide students with experience in the use of statistical package computer programs for data analysis. No prerequisite required.

555-3 Cardiovascular Pharmacology. A study of structure, biochemistry, electrophysiology, and neurogenic and humoral regulation of the cardiovascular system in normal and diseased states. Three hours of lecture per week. Prerequisite: 550a,b or equivalent, or consent of course coordinator. (Springfield Only.)

560-3 Geriatric Pharmacology. A study covering age-related changes in the physiology of particular organ systems which lead to the prevalence of many diseases and to altered drug action in the elderly. Research issues in aging will be discussed emphasizing the biological substrates of altered pharmacodynamics and pharmacokinetics in the aged. Prerequisite: 550a,b and consent of course coordinator. (Springfield Only.)

565-3 Principles of Toxicology. This course deals with principles and understanding of phenomena of chemical-biologic interactions; a study of adverse chemical effects on living organisms and risk that chemical exposure poses to man/environment; deleterious, acute, chronic chemical

effects on specific organs, tests to predict risks, facilitate search for safer chemicals and drugs and means of rational treatment of manifestations of toxicity; prominent discussion on drugs, medical devices, food additives, pesticides; regulation of toxic chemicals, hazardous wastes, toxic pollutants in water and air; and emphasis on diseases caused by and uniquely associated with drugs, diagnosis and treatments of such intoxicants. (Springfield Only.)

574-3 Neuropharmacology. (Same as Physiology 574.) A detailed examination of the biochemical aspects of neuropharmacology with emphasis on neurotransmitters; their synthesis, storage, release and metabolism in the central and peripheral nervous system. Considerable emphasis is placed on major research developments (both past and present) that influence how one studies the action of drugs on the nervous system. Prerequisite: Physiology 410 and Chemistry 451.

577-4 Neuroscience. This course provides basic neuroscience knowledge covering the fundamental principles of neural cell biology, neurophysiology, neurochemistry, neuroanatomy and behavior. This knowledge is essential to understand the mode of action of the drugs acting on excitable cells including muscle, autonomic system and central nervous system. No prerequisite.

590-1 to 24 Readings or Research in Current Pharmacological Topics. By special arrangement with the instructor with whom the student wishes to work. Graded *S/U* only.

599-1 to 6 Thesis Research. Research for thesis for a Master's degree. Hours and credit to be arranged by chair and adviser.

600-1 to 32 (1 to 12 per semester) Dissertation Research. Research for dissertation for the Ph.D. degree. Hours and credit to be arranged by chair and adviser.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

PHILOSOPHY

www.philosophy.siu.edu/
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COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Alexander, Thomas, Professor, Ph.D., Emory University, 1984; 1985. American philosophy, classical philosophy, aesthetics, Dewey.

Anderson, Douglas, Pennsylvania State University, 1984; 2005. American philosophy, Peirce.

Auxier, Randall E., Professor, Ph.D., Emory University, 1992; 2000. American philosophy, process philosophy, philosophy of religion, history of philosophy ethics.

Beardsworth, Sara, Assistant Professor, Ph.D., University of Warwick, 1994; 2004. Nineteenth and twentieth century European philosophy, Kristeva.

Berger, Douglas, Assistant Professor, Ph.D., Temple University, 2000; 2006. Classical Chinese Philosophy, Corss-Cultural Hermeneutics, 19th and 20th Century Continental Philosophy.

Clarke, David S., Jr., Professor, *Emeritus*, Ph.D., Emory University, 1964; 1966.

Delahoussaye, Gerard L., Assistant Professor, Ph.D., University of Ottawa, 2004; 2005. Medieval philosophy

Eames, Elizabeth R., Professor, *Emerita*, Ph.D., Bryn Mawr College, 1951; 1963.

Gatens-Robinson, Eugenie, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1983; 1974.

Gillan, Garth J., Professor, *Emeritus*, Ph.D., Duquesne University, 1966; 1969.

Hahn, Robert, Professor, Ph.D., Yale University, 1976; 1982. Greek philosophy, philosophy and history of science, Kant.

Hickman, Larry A., Professor, Ph.D., University of Texas at Austin, 1971; 1993. American philosophy, philosophy of technology.

Kelly, Matthew J., Associate Professor, *Emeritus*, Ph.D., University of Notre Dame, 1963; 1966.

Manfredi, Pat A., Associate Professor, Ph.D., University of Notre Dame, 1983; 1994. Philosophy of mind, American Realism,

Plochmann, George Kimball, Professor, *Emeritus*, Ph.D., University of Chicago, 1950; 1949.

Schedler, George, Professor, Ph.D., University of California, San Diego, 1973, J.D., Southern Illinois University, Carbondale, 1987; 1973. Philosophy of law, ethics, social philosophy.

Steinbock, Anthony J., Professor, Ph.D., State University of New York, Stony Brook, 1993; 1995. Contemporary French and German philosophy, recent European philosophy, 19th century philosophy.

Stickers, Kenneth W., Professor, Ph.D., DePaul University, 1982; 1997. American philosophy, continental philosophy, ethics, Scheler, James.

Tyman, Stephen, Associate Professor, Ph.D., University of Toronto, 1980; 1980. 18th and 19th century European philosophy, phenomenology, existentialism.

Youpa, Andrew, Assistant Professor, Ph.D., University of California, Irvine, 2002. 2003. History of modern philosophy, contemporary moral philosophy, and ancient philosophy.

The Department of Philosophy offers a wide range of advanced courses in the major areas within the field leading to the M.A. and Ph.D. degrees. Students are offered a diversified curriculum not dominated by one school of thought or method of approach. The broad range of specializations represented by the faculty exposes students to a variety of aspects of philosophy and at the same time permits them to concentrate on their own particular area of interest. Graduate-level courses in such allied fields as the natural and social sciences, the arts, linguistics, law, and women's studies offer supplements to the philosophy curriculum.

Graduate courses in philosophy may be used as a minor in programs leading to the Master of Arts or Master of Science in Education degrees. Students who do not plan to continue work in philosophy beyond the master's degree level are encouraged to elect a graduate minor or to combine philosophy with another subject in a 40-hour double major.

All graduate students in philosophy are expected to have some supervised experience in teaching basic work in the field, either through regular teaching assistantships or through special assignments. Opportunities for intern experience at area junior or community colleges are made available.

Admission

Admission to the philosophy graduate program requires the following:

1. An application form to be sent to the department. A non-refundable application fee of \$50.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.
2. Official transcripts of each school attended to be sent to the department.

3. A sample of written work, e.g., a term paper written for an undergraduate or graduate philosophy class, to be sent to the department's director of graduate studies.
4. Three letters of recommendation from individuals familiar with the student's work should be requested by the applicant to be sent to the department's director of graduate studies.
5. Graduate Record Examination verbal and quantitative scores are requested but not required to be submitted to the department. They are required for those applying for fellowships. TOEFL scores of at least 550 (paper score) or 220 (computer score) are required for all foreign students. These scores should be sent directly to the department. Scores for the Test of Spoken English are strongly recommended for foreign students applying for teaching assistantships.

The department expects an applicant for admission to its graduate program to have had at least 15 semester hours in philosophy or closely related theoretical subjects, including at least one semester in ethics, one in logic, and a year in the history of philosophy. The department may waive a portion of this requirement in favor of maturity and of quality of breadth of academic experience. Applicants will be required to make up serious background deficiencies by taking appropriate undergraduate philosophy courses without credit.

Application for financial assistance is made by filling out a financial assistance form. Applicants for Graduate School and Morris Fellowships should send these applications to the department by February 1 of the academic year preceding that for which application is made. Applications for departmental graduate assistantships should be sent to the department by April 1 of that year.

Entry into the Ph.D. Program. There are two routes by which a student may enter the doctoral program. The standard one is by completion of an M.A. degree in philosophy at an accredited institution. There is also one alternative available in special circumstances.

Accelerated Entry. After at least one semester in residence, a student enrolled in the M.A. program may petition the department's faculty for accelerated entry into the Ph.D. program. Such entry is permitted only in special circumstances where a student has completed the equivalent of an M.A. degree at another institution or has exhibited some other special qualifications (e.g. papers and publications) for the research or creative activities of doctoral-level study.

Master of Arts Degree

The department's M.A. degree program is designed both for students wishing to continue on for a Ph.D. degree and those who plan to receive a terminal master's degree. For the latter students a minor concentration of up to 9 semester hours outside philosophy is permitted, subject to

approval by the director of graduate studies. In order to receive the M.A. degree the student must fulfill the following requirements:

1. Complete 30 semester hours of course work in philosophy or allied fields, 6 of which may be credited toward preparation of a thesis.
2. Fulfillment of a formal logic requirement demonstrated in one of the four following ways:
 - a) by having earned a grade of B or better in an undergraduate course covering sentential calculus and first order predicate logic
 - b) by having earned a grade of B or better in Philosophy 105 as an undergraduate at SIUC
 - c) by passing, with a grade of B or better during one's first year of residence, an examination covering sentential calculus and first order predicate logic
 - d) by passing with a grade of B or better Philosophy 420 during one's first year of residence.
3. Fulfillment of a language or research tool requirement. This may be accomplished by passing, with a grade of 'B' or better, one of the following:
 - a) A 488 language course. (Note: these courses are offered through the Department of Foreign and Classical Languages at various times)
 - b) An examination offered through the Department of Philosophy.
 - c) A Directed Readings course offered either by the Department of Philosophy (PHIL 591) or (subject to approval by the Graduate Director) another academic unit, in which a philosophic text is translated and a final piece of research is produced.
 - d) The student may appeal to the Director of Graduate Studies:
 - 1) To produce a translation of a previously untranslated text or article under professional guidance, whether within or outside the Philosophy Department.
 - 2) For special dispensation, having already demonstrated sufficient competence in a language or research tool.

None of these options for fulfilling the language/research tool requirement count toward satisfying the 30 hour requirement, except the Directed Readings (PHIL 591).

4. A written comprehensive examination of up to five hours in length, dealing with the formulations and solutions of the persistent problems of philosophy as treated by major thinkers, from Thales to the end of the 19th Century. Normally, this examination should be taken no later than at the beginning of one's third semester of residence. Students who have incompletes older than one month may not sit for this exam. (Students are expected to make up incomplete grades within one month of completion of the course

in which the incomplete was awarded.) The Graduate Committee may address special considerations. Students preparing for the exam should consult the Department's Study Guide, available in the Graduate Secretary's Office. The History Comprehensive exam will be offered once each year in the Fall Semester. The Comprehensive examination papers will be read by five members of the Department's faculty. These readers will submit to the Department's Director of Graduate Studies a 'high pass,' 'pass,' 'low pass,' 'terminal pass,' or 'fail' recommendation. Students failing the Fall exam may attempt to retake the examination in the Spring, through a request to the Graduate Director. No student may sit for a History Comprehensive examination more than two times without the written consent of the Graduate Committee. The Graduate Committee will make such decisions on a case-by-case basis. A terminal pass allows the candidate to receive the Masters Degree as the final degree sought in the Department.

5. Fulfillment of a research writing requirement by either of the following. In general, this requirement should be met no later than the end of one's second year of residence.
 - a) Presentation of an acceptable thesis, 50-75 pages in text length, to be written under the direction of a member of the Department. Six thesis hours is the maximum number of hours that can count for credit for the Master's degree (paragraph A, above). A preliminary draft stating the thesis title, describing the problem to be investigated, the method to be used, the outline of the study, and a preliminary bibliography must be prepared in advance for the thesis advisor. An instruction booklet should be secured from the Graduate School or the Department Graduate Secretary, which specifies the proper form for these documents.
 - b). In the event of a terminal MA, the student may present three edited research papers, written in connection with graduate courses or seminars under three different individuals (whose prior approval must be obtained), to a special committee of three members, only one of whom may be an individual under whom the papers were originally written.

Doctor of Philosophy Degree

The Ph.D. degree in philosophy is designed to prepare students for college teaching and for research in their field of study. In order to receive the Ph.D. degree the student must fulfill the following requirements:

- 1 Completion of 30 semester hours of work beyond the M.A. level including:
Requirement in the History of the Analytic Movement:

In order to make sure that SIUC Philosophy doctorate candidates have at least a minimum literacy in analytic philosophy, all students will be required to take a seminar in the history of the analytic movement. This course will survey the key figures, ideas, and arguments from the beginning of the twentieth century. Incoming students may request to have this requirement waived by the Graduate Director if they have already taken courses in this material. Other courses offered by the Department may be approved as fulfilling this requirement at the discretion of the Graduate Director.

2. Demonstration of competence in formal logic in one of the following ways:
 - a) By having met the logic requirement for the Master's degree.
 - b) By having earned a grade of 'B' or better in an undergraduate course covering sentential calculus and first order predicate logic.
 - c) By having earned a grade of 'B' or better in Philosophy 105 as an undergraduate at SIUC.
 - d) By passing with a grade of 'B' or better, during one's first year of residence, an examination covering sentential calculus and first order predicate logic.
 - e) By passing with a grade of 'B' or better, Philosophy 420 during one's first year of residence.
3. Incoming doctoral students from other universities will be required to take the history comprehensive examination on the history of philosophy. This must be completed by the end of the first year of residence. Candidates who have already passed a comprehensive examination on the history of philosophy, or who have taken a range of courses in the history of philosophy may appeal to the Graduate Director to be waived from taking this examination.
4. Each doctoral candidate should take the preliminary examinations after (s)he has accumulated between 24 to 30 hours of credit beyond the Masters degree level and before (s)he begins work on the dissertation. (Students who have incompletes older than one month may not sit for these examinations. Students are expected to make up incomplete grades within one month of completion of the course in which the incomplete was awarded. The Graduate Committee may address special considerations.) Candidates should see the Graduate Secretary for a copy of the Department's Study Guide, which lists recommended readings and study questions. The examinations, each of which will not take more than five hours, will cover the following areas: (a) Metaphysics and Epistemology; (b) Value Fields. Examinations will be offered the week before classes begin in the Fall Semester. Students failing one or both may sign up to sit for a retake in the Spring Semester. The

preliminary examination papers will be read by five members of the Department's faculty. These readers will submit to the Department's Director of Graduate Studies a 'high pass,' 'pass,' 'low pass,' or 'fail' recommendation. No student may sit for a preliminary examination in either area more than two times without the written consent of the Graduate Committee. The Graduate Committee will make such decisions on a case-by-case basis.

5. Fulfillment of a language/research tool requirement in one of the following ways:

- a) As indicated in the M.A. level requirements (paragraph I,C), for a second language in addition to that studied for the Master's degree. The level of proficiency required is the same as the M.A. level and fulfilling the M.A. requirement counts as one of the two required.
- b) By showing greater proficiency in the same language that was used to meet the same requirements for the Master's degree.
- c) By demonstrating a reading knowledge of one language as indicated in the M.A. level requirements and by completing, satisfactorily, at least two courses in a research related area, such as mathematics, history, archival work, editing, and so on, pursued outside the Department at the graduate level. This option must be approved by the Graduate Director prior to being undertaken.

Fulfilling these requirements does not count toward the completion of 30 semester hours of work beyond the M.A. level, unless the work is done as Directed Readings (PHIL 591).

6. Admission to Candidacy – After 30 hours of course work have been completed, the logic and the language requirements have been fulfilled and the preliminary examinations passed, the Director of Graduate Studies (in the person of the Graduate Secretary) must file an Admit to Candidacy form with the Graduate School. This form is to be filed at least six months before the expected date of graduation. The student is responsible for seeing whether this form has, in fact, been filed. The student must have obtained the agreement of a faculty member to serve as dissertation director.

7. Dissertation

- a) The dissertation director is responsible for selecting a dissertation committee for the student. The committee shall consist of five graduate faculty members, at least one of whom shall be from an SIUC graduate program outside the student's academic unit. The Department allows for the possibility of faculty from other institutions to serve on the student's committee in addition to the requisite number of SIUC faculty. Once the dissertation director has been chosen

and the committee formed, any subsequent changes to the dissertation directorship position must be approved by the Director of Graduate Studies. The appropriate change form must be sent to the Dean of the Graduate School for approval.

- b) In preparation for the writing of the dissertation, the candidate must have a prospectus review. The Director of the dissertation is responsible, in consultation with the candidate, for determining what appropriate background reading is necessary for beginning the dissertation and for the initial formulation of the project. The candidate will proceed to generate the prospectus. A prospectus should be approximately 10 - 20 pages in length; it should also include a proposed outline for the dissertation and a working bibliography. The Director of the dissertation will appoint a committee (four professors, including one from outside the Department) that will convene for the review of the prospectus. The review will help the candidate in the final formulation of the project before proceeding with the writing of the dissertation. The committee members will fill out a comment sheet for the candidate.
- c) While working on the dissertation, the student must register for the course numbered 600. The student is to devote at least one academic year of full-time work to complete the dissertation and will register for 24 semester hours of dissertation credit (Students may sign up for from 1 to 16 hours of PHIL 600 per semester). For example, the student wishing to complete the dissertation in one year may register for 12 hours of dissertation credit for each of two terms. Students who have registered for 24 semester hours of dissertation credit and have not completed the doctoral dissertation are subject to the continuing enrollment requirement course number 601. Students are required to complete 24 hours of Philosophy 600. The student may take only 6 of these 600 level hours prior to formal admission to candidacy, and only 6 of these hours will count towards the residency requirement.
- d) Students who have completed all but the dissertation requirements, but who have previously enrolled for the minimum number of research, thesis, or dissertation credit hours required of the degree, must enroll every semester for at least one hour until all degree requirements have been completed (Summer sessions exempt). Whether in residence or not, students are required to enroll in Continuing Enrollment (PHIL 601 - 1 hour p/semester) if not

otherwise enrolled. Concurrent registration in any other course is not acceptable. See the Graduate Catalog for more specific details, under heading GENERAL REGULATIONS AND PROCEDURES.

- e) The candidate will do the required research and write the dissertation. There is no given length for a dissertation, but 150 to 250 pages is the average length of a philosophy dissertation. An instruction booklet for dissertation preparation should be secured from the Graduate School or the Department Graduate Secretary.
- f) The candidate and the dissertation director should work together until the document is ready to receive critical input from the committee. When the dissertation director indicates that the dissertation is ready for defense, it shall be required of the dissertation director to submit to each committee member a copy of the dissertation for the members' examination. This

must be delivered at least one month in advance of the scheduled defense. The committee must then decide whether or not the dissertation is acceptable for defense.

- g) The candidate shall conduct an oral defense of the dissertation and related topics in the field before the dissertation committee. The oral defense is open to the public. Only the committee members vote or make recommendations concerning the acceptance of the dissertation and final examination. At the discretion of the dissertation director, guests may be permitted to ask questions of the candidate after the committee members have conducted the examination. A student will be recommended for the degree of Doctor of Philosophy only if the members of the committee judge both the dissertation and the performance at the final oral examination to be satisfactory. One dissenting vote is permitted.

Courses (PHIL)

400-3 Philosophy of Mind. An investigation of the philosophic issues raised by several competing theories of mind, focusing on the fundamental debate between reductionistic accounts (e.g., central state materialism, identity theories of the physical and mental) and views which reject such proposed reductions. Traditional and contemporary theories will be examined. Designed for students in the life and social sciences with little or no background in philosophy as well as philosophy students.

405-3 Democratic Theory. (See Political Science 405). An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: POLS 114 or consent of instructor.

415-3 Logic of Social Sciences. (Same as Sociology 415.) An examination of the theoretical structure and nature of the social sciences and their epistemological foundations. The relationship of social theory to social criticism; theory and praxis. Historical experience and social objectivity. Social theory as practical knowledge.

420-3 Symbolic Logic. An introduction to first order logic with an emphasis on quantification. Topics include the semantics of the quantifiers, first-order validity, quantifier equivalences, functions, informal proofs, proofs on non-consequence, derivations using a Fitch natural deduction system, translations to and from English, soundness and completeness, the axiomatic method, first order set theory, and mathematical induction. Prerequisite: 320 or consent of the instructor.

434-3 Media Ethics. (Same as JRNL 434) Explores the moral environment of the mass media and the ethical problems that confront media practitioners. Models of ethical decision-making and moral philosophy are

introduced to encourage students to think critically about the mass media and their roles in modern society.

441-3 Philosophy of Politics. (Same as Political Science 403.) The theory of political and social foundations; the theory of the state, justice and revolution. Classical and contemporary readings such as: Plato, Aristotle, Hobbes, Locke, Rousseau, Marx, Dewey, Adorno and others. Prerequisite: 340 or Philosophy 102 or consent of instructor.

445-3 Philosophy of Law. Study of contemporary philosophical essays on topics at the intersection of law and philosophy, such as abortion on demand, capital punishment, plea bargaining, campus speech codes, legalization of addictive drugs, and animal rights, and of what systematic philosophers, such as Thomas Hobbes, John Locke, John Stuart Mill, Karl Marx, and H.L.A. Hart have written about the nature of a legal system and the appropriate realm of legal regulation.

446-3 Feminist Philosophy. (Same as Women's Studies 456.) (a) Feminist Philosophy – a general survey of feminist theory and philosophical perspectives. (b) Special Topics in Feminist Philosophy – A special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc. (c) Women Philosophers – explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc.

460-3 Philosophy of Art. We will examine several important theories that define art by focusing in on only one aspect, for example, imitation, expression, form, institutional setting or even indefinability. What role does imagination play in each of these accounts, and does this

tell us something important about how people experience their world?

468-9 (3,3,3) Kant. (a) Theoretical Philosophy; (b) Practical Philosophy (c) Aesthetics, Teleology, and Religion.

469-3 Hellenistic and Roman Philosophy to Augustine. The career of philosophy during the Hellenistic, Roman and Early Medieval Period, especially as a means of personal salvation exploring such figures and movements as: Epicurus, Stoicism, the Middle Academy, Skepticism, Gnosticism, Plotinus, Early Christianity, Augustine and Boethius. Prerequisite: 304 or consent of instructor.

470-6 (3,3) Greek Philosophy. (a) Plato: Survey of Plato's dialogues mostly selected from those of the middle period (Meno, Symposium, Republic, Phaedrus), perhaps along with some from the early period (especially Protagoras) and late period (Sophist, Timaeus). (b) Aristotle. A general survey of the Aristotelian philosophy including his theory of nature, metaphysics, ethics and political philosophy. Readings will consist of selections from the corpus. Prerequisite: 304 or consent of instructor.

471A-3 History of Medieval Philosophy. An examination of some of the most important figures and themes in medieval philosophical thought. Medieval debates in the area of metaphysics, natural philosophy, epistemology, ethics and politics will be explored in reading the works of such figures as Augustine, Boethius, Abelard, Avicenna, Averroes, Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Ockham and Nicholas of Cusa. Prerequisite: 304 or consent of instructor.

471B-3 The Medieval Thinker. An examination of the thought of one of the central and most influential figures of the medieval world. Possible subjects of the course are Augustine of Hippo, Al-Ghazali, Moses Maimonides, Bonaventure, Thomas Aquinas, Duns Scotus, Dante Alighieri or William Ockham. Prerequisite: 304 or consent of instructor.

472-6 (3,3) The Rationalists. (a) Descartes. A study of the Philosophy of Rene Descartes, concentrating on his major writings, *Meditations*, *Discourse on the Method*, and *Principles of Philosophy*, as well as his philosophical correspondence. May include study of Descartes' relation to the later Rationalists. (b) Study of the philosophy of one or more of Spinoza, Leibniz, Arnauld, Malebranche, Wolff. May include study of the relation of these philosophers to Descartes. Prerequisite: 305 or consent of instructor.

473-6 (3,3) The Empiricists. (a) Locke; (b) Hume. Study of the principles of British empiricism as represented by either (a) Locke or (b) Hume. May also include study of Berkeley. Prerequisite: 305 or consent of instructor.

475-3 Topics in Asian Philosophy. Extended examination of one or two major texts, figures or philosophical schools in Asian philosophy. Topics vary; students are advised to consult with the instructor.

476-3 Islamic Philosophy. An understanding of medieval Islamic philosophy and theology focusing on the period of

time from Al-Kindi (9th Century) to Averroes (12th Century).

477-3 Indian Philosophy. An examination of several major traditions and texts of Indian philosophy, such as Vedanta, Nyaya, the *Upanishads*, the *Bhagava Gita*, and contemporary political philosophy, with an emphasis on their social and historical contexts.

478-3 Buddhist Philosophy. An examination of several major philosophical traditions or figures in Buddhism, such as Madhyamika, Zen, Mind-Only, and the Kyoto school, with an emphasis on their social and historical contexts.

479-3 Chinese Philosophy. An examination of several major traditions of Chinese philosophy, such as Confucianism, Taoism, Neoconfucianism, Mohism, and Maoism, with an emphasis on their social and historical contexts.

480-3 History of Analytic Philosophy. An introduction to the works of several major 20th century philosophers in the analytic tradition, including several of the following: Frege, Russell, Moore, Wittgenstein (early and later), members of the Vienna Circle, Ayer, Ryle, Quine, Putnam, Davidson. Includes discussion of challenges to the tradition that have developed within it.

482-3 Recent European Philosophy. Philosophical trends in Europe from the end of the 19th Century to the present. Phenomenology, existentialism, the new Marxism, structuralism and other developments. Language, history, culture and politics.

486-3 Early American Philosophy. From the Colonial Era to the Eve of World War I. This course will trace the transplantation of European philosophy to the New World and watch its unique process of development. Movements such as Puritanism, the theory of the American Revolution, the philosophical basis of the Constitution, transcendentalism, idealism, Darwinism and pragmatism and such figures as: Jonathan Edwards, Thomas Jefferson, James Madison, Ralph Waldo Emerson, Josiah Royce, Charles Sanders Peirce and William James.

487-3 Recent American Philosophy. From World War I to the present. The major American philosophers of the 20th Century, covering such issues as naturalism, emergentism, process philosophy, logical analysis and neopragmatism. Figures include: John Dewey, George Herbert Mead, George Santayana, Alfred N. Whitehead, C. I. Lewis, W. O. Quine and Richard Rorty.

490-1 to 8 Special Problems. Hours and credits to be arranged. Courses for qualified students who need to pursue certain topics further than regularly titled courses permit. Special topics announced from time to time. Students are invited to suggest topics. Prerequisite: consent of department.

500-3 Metaphysics. Seminar focusing on readings taken from major classical to contemporary writings in the subject of metaphysics (e.g. Aristotle's *Metaphysics*, Descartes' *Principles*, Whitehead's *Process and Reality*, etc.) or on

special movements or on problems in the subject (e.g., substance, causation, reductionism, etc.)

501-3 Philosophy of Religion. Analysis of a problem in philosophical theology or the phenomenology of religion or of the work of a particular thinker.

530-3 Theory of Knowledge. Seminar focusing on readings taken from major classical to contemporary writings in the theory of knowledge (e.g., Plato, *Theaetetus*; Aristotle, *De Anima*; Locke, *Essay Concerning Human Understanding*; Quine, *Ontological Relativity*; Rorty, *The Mirror of Nature*, etc.) or on movements or problems in the subject (the object of knowledge, justification, method, etc.)

542-3 Political and Legal Philosophy. Relations of law, morality, and politics, and consideration of problems and issues in philosophy of law.

545-3 Ethics. An examination of the fundamental assumptions underlying twentieth century British and American moral theory. Special attention is given to recent attempts to develop a psychologically realistic moral philosophy that avoids both moral absolutism and extreme forms of relativism.

551-1 Introduction to Teaching and the Profession. Introduction to the methodology and ethics of teaching philosophy; supervision of teaching assistants. Prerequisite: assistantship contract.

552-1 Teaching Practicum. Ongoing supervision of teaching assistants and discussion of pedagogical, ethical and professional issues. Prerequisite: 551.

553-1 Supervision of Teaching for Graduate Assistants. Instruction in the methods of teaching philosophy and direct supervision of course teaching. Prerequisite: 551.

558-3 Phenomenology Research Group. The Phenomenology Research Group is a forum for doing phenomenology. Each year we focus on a particular theme. Beginning with first-person perspectives, we examine how something becomes meaningful for us in experience, and we inquire after cross-cultural structures of those experiences. Since the touchstone for such reflection is experience, the orientation of scholarship is problem-based and contextual. Satisfactory/Unsatisfactory Grades.

560-3 Aesthetics. Selected topics or writings.

562-3 Philosophy of Human Communication. (See Speech Communication 562.)

563-3 Philosophy of Nietzsche. A reading of Nietzsche's works and critical discussion of his major themes in light of their historical and contemporary reception.

564-3 Frankfurt School Critical Theory. An examination of the conceptual foundations and historico-philosophical theories of the Institute for Social Research School, known as critical theory, covering one or more of the major first- and second-generation thinkers: Horkheimer, Adorno, Marcuse, Habermas.

565-3 Continental Feminist Philosophy. An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic

theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman. (same as WMST. 565)

566-3 Psychoanalysis. An examination of psychoanalytic theory in the context of continental philosophy, studying the foundation of psychoanalysis and major developments since Freud, including French psychoanalytic theory, the British School, and developments in American psychoanalysis.

570-3 American Idealism. One or more American idealists. Recent seminars have been devoted to the thought of Brand Blanshard and Peter A. Bertocci.

573-12 (3,3,3,3) American Realism. An examination of selected works of representatives in the realist tradition of American philosophy. (a) New Realism. (b) Critical Realism. (c) Scientific Realism. (d) Post Realism. a, b, c, & d can each be taken for 3 hours of credit.

577-12 (3,3,3,3) Classical American Philosophy. (a) Peirce. A focused study of various aspects of Peirce's philosophy such as his pragmatism and semiotics. (b) James. A critical examination of James' pragmatism, radical empiricism and pluralism. (c) Dewey. An examination of such themes in Dewey's philosophy as the influence of Darwin, nature and experience, aesthetics, technology and democracy. (d) Mead. A critical examination of Mead's theories regarding the social self and social life.

578-3 Husserl. A careful and systematic reading of Husserl's major works or treatment of important themes throughout his writings, such as, the problem of evidence, perception and rationality, time-consciousness, phenomenology of association, or the life world.

579-3 Heidegger. This course features a close reading of Heidegger's masterwork, *BEING AND TIME*, supplemented by selected later essay and secondary literature as suggested by the instructor.

580-3 The Pre-Socratics. The emergence of Greek philosophy in the sixth century B.C., the Milesians, Heraclitus and the Pythagoreans; the Eleatic movement and Parmenides, and the critical systems of Empedocles, Anaxagoras, and atomism; concluding with a discussion of the Sophistic movement and Socrates. Epic, lyric and dramatic literature of the period may be examined as well as philosophical writings.

581-3 Plato. Intensive reading of selected texts focusing on some aspect of Plato's thought or on Platonism as a movement.

582-3 Aristotle. Intensive reading on several texts, analyzing selected portions of Aristotle's thought.

583-3 Merleau-Ponty. This course will focus on a major work by Merleau-Ponty (such as the *Phenomenology of Perception*), or will develop a major theme (perception, aesthetics, politics) in his thought by consulting several of his works.

584-3 Levinas. This course will be devoted to a detailed and systematic study of one of Levinas's major works, such as *Totality and Infinity* or *Otherwise than Being*, or to a

survey of key elements of his thought contained in his many important essays.

587-3 Kant.

588-3 Hegel.

589-3 Scheler. This course is devoted to a systematic reading of Scheler's works that concern any one of the many dimensions of his thought, for example, the nature of "person," ethics and value theory, the philosophy of religion, the sociology of knowledge, or politics.

590-1 to 9 General Graduate Seminar. Selected topics or problems in philosophy.

591-1 to 16 Readings in Philosophy. Supervised readings for qualified students. Prerequisite: students must have written permission from the graduate director to register for more than six hours at each level.

599-2 to 6 Thesis. Minimum of four hours to be counted towards a Master's degree.

600-3 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

PHYSICAL EDUCATION

(See Kinesiology for program description.)

PHYSICIAN ASSISTANT STUDIES

www.paprogram.siuc.edu

COLLEGE OF APPLIED SCIENCES AND ARTS

Graduate Faculty:

Dorris, Jason, Clinical Assistant Professor, MPAS, PA-C, University of Nebraska Medical School, 2006; 2006. Veteran's medical care and access issues, urology, gastroenterology, and cardiology.

DiCocco, Margaret, Assistant Professor, M.S. University of Texas, San Antonio, 1998. Research design, statistical analysis and interpretation and evidence-based medicine.

Kelly, Cheri, Assistant Professor, and *Interim Director*, MS, Southern Illinois University, 1990, 1990. Clinical medicine, clinical anatomy, medical physiology, autism spectrum disorders, internal medicine topics.

Pate, Alicia, Clinical Assistant Professor, MPAS, PA-C, University of Nebraska, 2007; 2004. Cardiothoracic surgery, cardiology, surgery and nursing.

Ryznyk, Laurie, Professor, MSPA, University of Nebraska Medical Center, 2001, 1995. Problem-based learning, rural and family medicine, clinical medicine, infectious disease, spirituality and medicine, mentoring.

Smith, Sidney, Clinical Assistant Professor, M.D., F.A.A.P, Northwestern University School of Medicine, 1965. Pediatrics.

The Physician Assistant Program is offered by the School of Allied Health in the College of Applied Sciences and Arts in collaboration with the Department of Family and Community Medicine of the School of Medicine. The program utilizes a problem-based learning curriculum and clinical rotations to prepare primary care physician assistants to practice medicine with physician supervision. The PA Program also offers a Master's degree Completion Program (MCP) for Bachelor's degree prepared PAs who wish to earn a Master's Degree. (See information about the Completion Program after the professional program information.)

The physician assistant is often the first health care provider to see a patient and perform a variety of tasks including collecting historical and physical examination data from the patient and ordering appropriate laboratory and diagnostic tests. The physician assistant synthesizes patient information and participates in formulating and executing a treatment plan to meet the patient's needs. A physician assistant can evaluate psychological aspects of a patient's health, counsel when appropriate, and teach patients about primary health problems. The physician assistant makes referrals when indicated and can perform procedures, such as EKGs, venipuncture, casting, suturing, and injections. The physician assistant prescribes medications as delegated by the supervising physician, according to state law. Graduates of the PA Program are trained as primary care providers and awarded the Master of Science in Physician Assistant Studies (MSPA) degree.

Admission

To be considered for enrollment in the Physician Assistant Program, prospective students must be admitted to the Graduate School and have had completed the program prerequisites and other requirements. This program requires a nonrefundable \$50.00 application fee (subject to change per Board of Trustees approval) that must be

submitted with the application for Admissions to Graduate Study in the Physician Assistant Program. Applicants may pay this fee by credit card if applying electronically or by personal check, cashier's check, or money order made out to SIU, and payable through a U.S. Bank. MSPA students will not receive the border state decrease adjustment to their tuition and fees. Therefore, out-of-state students will pay a higher tuition rate. No advanced placement is awarded towards completion of PA Program courses, even if the applicant is licensed as a medical doctor.

Degree Requirements

Prospective students must have completed at the following prerequisite courses: Medical Terminology- one semester or proficiency, Chemistry or Biochemistry or Organic or Inorganic-two semesters with labs; Psychology one semester; Human Physiology-one semester (higher level preferred); Human Anatomy-one semester (higher level preferred with cadaver); Microbiology-one semester; General Biology for science majors, Cell and Molecular Biology, Genetics -one semester; Statistics-one semester; English Composition-one semester; Speech or Oral Communication-one semester; CPR for Healthcare Providers. Anatomy and Physiology must be completed within the last five years of matriculation. Graduate Record Examination, the Miller's Analogy Test and MCAT scores must have been taken within the past five years and should be submitted with application materials. Applicants must have successfully completed all the required prerequisites by the fall term prior to matriculation.

Students who have completed or will soon complete a Bachelor's degree and prerequisite course requirements should contact the Academic Advisor at the Physician Assistant Program for application information. Enrollment in the Physician Assistant Program is limited and based on a competitive process. Applicants will be evaluated on the overall submitted application package including GPA,

academic potential, motivation, familiarity with the PA role, oral and written communication skills, inter-personal skills, and potential for success in the SIUC PA Program and the PA profession. Preference will be given to applicants from rural or medically underserved areas. Students will be selected by the Admissions Committee for an interview with a maximum of 30 being admitted to the professional sequence. The MSPA program is extremely rigorous and outside employment while in the Program is discouraged.

Students will be selected for the professional sequence to begin study only in the summer session. Those accepted into the Program will be notified of acceptance by the spring semester prior to the summer of entry. The curriculum is a 26 month sequence with the first 12 months (Phase I) consisting of problem-based learning activities, basic science and clinical medicine courses, and clinical experiences. The next 14 months consist of clinical rotations with seminars (Phase II) and a summer preceptorship (Phase III). Students must complete a

Master's Project before graduation. During the clinical rotation phase, students may be required to relocate to other locations, called Hubsites, throughout Illinois. These include, but are not limited to: Carbondale/Delta Region, Decatur, Mattoon, Olney, Pekin, Quincy, or Springfield. More information can be obtained from the PA Program Academic Advisor at: paadvisement-L@listserv.siu.edu

Requirements for Major in Physician Assistant Studies Program

<u>First Year Sequence (Phase I)</u>	54
Physician Assistant 500, 501, 502, 503, 504, 505, 506, 507, 511, 512, 513, 514, 515, 521, 522, 523, 524, 525, 531, 532, 533, 534, 535, 536, 547, 550, 582, 599	
<u>Second Year (Phase II & Phase III)</u>	36
Physician Assistant 545, 551, 580, 581, 582, 583, 596, 599	
<u>Total</u>	90

Curricular Guide

PHASE I

SEMESTER 1 – SUMMER (UNIT 1) – 10 CREDIT HOURS

PA 500-1	Introduction to the Profession
PA 501-3	PBL, Unit 1
PA 511-1	Pharmacology
PA 521-2	Clinical Anatomy and Integrated Science
PA 531-2	Patient Evaluation
PA 547-1	Research Methods

SEMESTER 2 – FALL (UNITS 2 & 3) – 22 CREDIT HOURS

PA 502-3; PA 503-3	PBL, Units 2 and 3
PA 506-1	Patient Education/Behavioral Science
PA 507-1	Diversity in Medical Practice
PA 512-1; PA 513-1	Pharmacology II, III
PA 522-2; PA 523-2	Clinical Anatomy and Integrated Sciences II, III
PA 532-2; PA 533-2	Patient Evaluation II, III
PA 550-2;	Clinical Mentoring - Phase I
PA 599-2	Master's Seminar

SEMESTER 3 – SPRING (UNITS 4 & 5) – 22 CREDIT HOURS

PA 504-3; PA 505-3	PBL, Units 4 and 5
PA 506-1	Patient Education/Behavioral Science
PA 514-1; PA 515-1	Pharmacology IV, V
PA 524-2; PA 525-2	Clinical Anatomy and Integrated Sciences IV, V
PA 534-2	Clinical/Procedural Skills
PA 535-2	ACLS/EKG
PA 536-1	Introduction to the Surgical Setting
PA 550-2;	Clinical Mentoring – Phase I
PA 599-2	Master's Seminar

PHASE II

SEMESTER 4 – SUMMER – 6 CREDIT HOURS

PA 551-1	Clinical Mentoring – Phase II
PA 580-1	PBL Tutor Group – Phase II
PA 581-3	Clinical Rotations I
PA 599-1	Master's Seminar

SEMESTER 5 – FALL – 12 CREDIT HOURS

PA 551-2	Clinical Mentoring – Phase II
PA 580-2	PBL Tutor Group – Phase II
PA 582-6	Clinical Rotations II
PA 599-2	Master's Seminar

SEMESTER 6 – SPRING – 12 CREDIT HOURS

PA 551-2	Clinical Mentoring – Phase II
PA 580-2	PBL Tutor Group – Phase II
PA 582-6	Clinical Rotations III
PA 599-2	Master's Seminar

PHASE III

SEMESTER 7 – SUMMER – 6 CREDIT HOURS

PA 545-3	Health Care Systems
PA 596-3	Preceptorship

A limited number of electives are also available to PA students:

PA Elective Courses:

PA 508 1-3	Holistic Medicine
PA 585 1-6	Independent Study

PA Continuing Enrollment:

PA 601-1
Used to complete the Master's Project if all other Program requirements are met.

Master's Completion Program (30 credit hours, 12 months)

This option is for those students who are PAs and hold a Bachelor's degree from an accredited PA Program. Interested candidates must be admitted to the Graduate School and complete an application to the Master's Completion Program (MCP) available through the PA Program Academic Advisor at paadvisement-L@listserv.siu.edu.

Students are awarded the MSPA degree upon satisfactory completion of all requirements. Students enrolled in the Master's Completion Program may complete the program via distance education with periodically scheduled seminars on campus, as required by the course syllabi. See descriptions of individual courses below.

Requirements for Master's Completion Program

<i>First Year Sequence</i>	22
Physician Assistant 540, 547, 548, 549, 599	
<i>Second Year Sequence</i>	8
Physician Assistant 545, 599	
<i>Total</i>	30

MASTER'S COMPLETION PROGRAM CURRICULAR GUIDE

SEMESTER 1 – FALL - 10 CREDIT HOURS

PA 547-4	Research Methods and Evidence-Based Medicine
PA 548-4	Medicine in Practice
PA 599-2	Master's Seminar

Courses (PA)

500-1 Introduction to the PA Profession. This course is designed to provide students with an understanding of professional issues of the Physician Assistant. Students are introduced to physician assistant history, standards of quality assurance, credentialing and licensure, regulations governing practice, business issues, and contract negotiation. Students explore opportunities in professional organizations and ways to strength their professional development. Prerequisite: limited to Physician Assistant majors.

501-3 Problem Based Learning Group, Unit 1. This course is designed to focus on medical topics in cardiology and gastroenterology. Problem-based learning is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Six to nine students are allowed per section. Prerequisite: limited to Physician Assistant majors.

502-3 Problem Based Learning Group, Unit 2. This course is designed to focus on internal medicine topics in respiratory medicine, dermatology, urology, and infectious disease. Problem based learning is used with emphasis on

SEMESTER 2 – SPRING - 12 CREDIT HOURS

PA 540-4	Ethical Issues in PA Practice
PA 549-4	Medicine in Practice
PA 599-4	Masters Seminar

SEMESTER 3 – SUMMER - 8 CREDIT HOURS

PA 545-3	Health Care Systems
PA 599-5	Master's Seminar

A limited number of electives are also available to PA students:

PA Elective Courses:

PA 508 1-3	Holistic Medicine
PA 585 1-6	Independent Study

PA Continuing Enrollment:

PA 601-1 Used to complete the Master's Project if all other Program requirements are met.

For information about problem-based learning and more information on either degree option offered by the Physician Assistant Program, visit our web site at: www.paprogram.siu.edu or call the Program Academic Advisor.

expanding the student's knowledge base, enhancing clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Six to nine students allowed per section. Prerequisite: 501.

503-3 Problem Based Learning Group, Unit 3. This course is designed to focus on internal medicine topics in neurological and psychiatric diseases. Problem-based learning is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Six to nine students allowed per section. Prerequisite: 502.

504-3 Problem Based Learning Group, Unit 4. This course is designed to focus on health concerns, physiological and psychosocial issues of obstetrics, gynecology, urology, and pediatric gastroenterology. Problem based learning is utilized in expanding the student's knowledge base, clinical reasoning skills, self-directed learning, and improving interpersonal communication skills. Six to nine students allowed per section. Prerequisite: 503.

505-3 Problem Based Learning Group, Unit 5. This course is designed to focus on medical topics related to endocrinology, renal disease, and metabolism. Problem-based learning is utilized with emphasis on expanding the student's knowledge base, enhancing the student's clinical reasoning skills and self-directed learning, and improving interpersonal communication skills among students and patients. Six to nine students allowed per section. Prerequisite: 504.

506-1 to 3 Behavioral Science/Patient Education. This course explores behavioral science and patient education as it applies to the practice of medicine, as well as maintenance of health and prevention of illness. Prerequisite: limited to Physician Assistant majors.

507-1 Diversity in Medical Practice. Students examine issues that arise when delivering medical services to persons of diverse cultures, ethnicity, race, sexual orientation, gender, and socioeconomic status. Implications for providing medical services to persons who have experienced discrimination and disadvantage will be discussed. Prerequisite: limited to Physician Assistant majors.

508-1 to 3 Holistic Medicine. This course is designed to explore the current research, practice and applications of Mind-Body-Spirit Medicine (MBSM). Students will explore the use of various techniques for use in clinical and therapeutic settings as well as for maintaining their own personal health. Prerequisite: limited to Physician Assistant majors.

511-1 Pharmacology I. This course introduces students to the therapeutic agents most commonly used for treatment of disorders of the cardiovascular and gastrointestinal systems. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, mechanism of action and excretion are investigated. Prerequisite: limited to Physician Assistant majors.

512-1 Pharmacology II. This course introduces students to the therapeutic agents most commonly used involving the pulmonary and integumentary systems, as well as those medications used in infectious disease. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Prerequisite: 511.

513-1 Pharmacology III. This course introduces students to the therapeutic agents most commonly used in neurology and psychiatry. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Prerequisite: 512.

514-1 Pharmacology IV. This course introduces students to the therapeutic agents most commonly used in practice involving pregnancy, neonates, infants, sexually transmitted diseases, menopause, and prostate disorders. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Prerequisite: 513.

515-1 Pharmacology V. This course introduces students to the therapeutic agents most commonly used in treating diabetes, thyroid disorders, renal disease, and fluid disorders. The practical aspects of dosage, schedules, therapeutic effect, adverse reactions, metabolism, method of action and excretion are investigated. Prerequisite: 514.

521-2 Clinical Anatomy and Integrated Sciences I. This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Prerequisite: limited to Physician Assistant majors.

522-2 Clinical Anatomy and Integrated Sciences II. This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Prerequisite: 521.

523-2 Clinical Anatomy and Integrated Sciences III. This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Prerequisite: 522.

524-2 Clinical Anatomy and Integrated Sciences IV. This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Prerequisite: 523.

525-2 Clinical Anatomy and Integrated Sciences V. This course involves the study of anatomical structures with cadaveric materials, clinical applications, physiology and pathophysiology of selected systems. Radiology, microscopy, and embryology issues will be included. Prerequisite: 524.

531-2 Patient Evaluation I. This course is designed to prepare the Physician Assistant student in taking a patient history and performing portions of the physical exam. Interview and communication skills, medical terminology, and recording patient information are also explored. Prerequisite: limited to Physician Assistant majors.

532-2 Patient Evaluation II. This course is designed to build on student's knowledge of pertinent physical exam skills, and increase knowledge regarding the medical history and clinical procedures. Students continue to improve skills in areas of the patient interview, medical terminology, and recording patient information. Prerequisite: 531.

533-2 Patient Evaluation III. This course is designed to build on students' knowledge of physical exam skills, introduce new systems, and improve skills in areas of the patient interview, medical terminology, and recording patient information. Prerequisite: 532.

534-2 Clinical Procedural Skills. Students develop and expand their skills in performance of clinical procedural

skills needed for competency in office and hospital-based practice. Topics will include central line placement, IV therapy, EKG, lumbar puncture, venipuncture, casting, suturing, and thoracentesis. Prerequisite: 533.

535-2 EKG and Advanced Cardiac Life Support (ACLS). ELG/ACLS is designed to provide the knowledge and skills needed to read EKGs and to evaluate and manage the first ten minutes of an adult ventricular fibrillation/tachycardia arrest. Students learn to manage ten core ACLS cases, a respiratory emergency, four types of cardiac arrest, four types of pre-arrest emergencies, and stroke. May substitute for two credit hours of 549. Prerequisite: 533.

536-1 Introduction to the Surgical Setting. During this course, the student will be exposed to the various aspects of the general surgical setting. Fundamentals to be introduced include pre- and post-operative care, sterile technique, gowning and gloving, and the identification of surgical instruments. Prerequisite: limited to Physician Assistant majors.

540-4 Ethical Issues in Physician Assistant Practice. This course is primarily for the Master's Completion student and focuses on ethical principles (beneficence, autonomy, nonmaleficence, justice, and autonomy) and the application of these to ethical dilemmas encountered in medical service provision and medical research. The student will examine federal and state legislation, policies, and practice guidelines as related to the practicing Physician Assistant. Prerequisite: limited to Physician Assistant majors.

545-3 Health Care Systems. This course is designed to cover the following topics: delivery of health care, standards of care and guidelines as they affect practice issues, cost and effectiveness, economics of health care, insurance and health care, indigent medical care, the health workforce, access to care, health policy, and technology (electronic medical records, email, telemedicine). Prerequisite: limited to Physician Assistant majors.

547-1-4 Research Methods and Evidence Based Medicine (EBM). This course focuses on scientific inquiry within the Physician Assistant practice, covering the application of basic research methodology including problem formation, research designs, sampling, measurement, data analysis technical writing and dissemination of research results, and research ethics. Students will also focus on developing evidence-based medicine (EBM) skills. Prerequisite: limited to Physician Assistant majors.

548-4 Medicine in Practice I. Students in this course study evidence-based principles and apply them to clinical practice. They also expand their knowledge of clinical procedures and therapeutics. Students log clinical hours as well as complete didactic assignments throughout this course. Prerequisite: limited to Physician Assistant majors.

549-4 Medicine in Practice II. Students in this course continue to build upon the study of evidence-based medicine principles learned in previous courses and apply

them to clinical practice. They will also expand their knowledge of clinical procedures and therapeutics. Students log clinical hours as well as complete didactic assignments throughout this course. Prerequisite: 501, 548.

550-1 to 4 Clinical Mentoring – Phase I. Students gain clinical experience in the community setting by participating in a one-half day per week continuity clinic in Family Medicine with a designated mentor. Students register for this course during the first fall semester of the program. They register again for this course in the spring semester, until Phase II. Prerequisite: limited to Physician Assistant majors.

551-1 to 5 Clinical Mentoring – Phase II. Students continue to gain clinical experience in the community setting by participating in a one-half day per week continuity clinic in Family Medicine with a designated mentor. Students register for this course during the second semester of the program. They register again for this course in subsequent semesters, until the Preceptorship. Maximum hours per term are two. Prerequisite: 550.

580-1 to 6 Problem Based Learning (PBL) Group Phase II. Phase II students participate in a one-half day per week problem based learning tutor group, in which they engage in the Barrowsian method of problem-based learning at respective Hubsites. This course is designated to foster independence in clinical reasoning and knowledge synthesis by working through patient problems, as well as improving the application of knowledge to clinical practice. Prerequisite: limited to Physician Assistant major.

581-3 Clinical Rotations I. This is the first (summer semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Prerequisite: limited to Physician Assistant majors.

582-6 Clinical Rotations II. This is the second course (fall semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Prerequisite: 581.

583-6 Clinical Rotations III. This is the third course (spring semester) in a three course sequence of supervised clinical experience in a variety of settings and nine specialty areas. Prerequisite: 582.

585-1 to 6 Independent Study. Directed independent study in selected areas of Physician Assistant studies. Prerequisite: limited to Physician Assistant majors.

596-3 Preceptorship. The eight week preceptorship simulates the role of the Master's prepared graduate Physician Assistant, with supervision by the clinical preceptor. This is generally completed in a primary care area of medicine. Prerequisite: 551.

599-1 to 15 Master's Seminar. This is a longitudinal course taken over several semesters in which students work on proposal design, development, construction, research, writing, and project presentation. The Master's Seminar culminates in defense of a Grand Rounds Presentation, Community Project Presentation, or a

published Problem-Based Learning Module and Tutor Guide. Prerequisite: Limited to Physician Assistant majors. Students in Phase I must register for section 1; those in Phase II and MCP students must register for section 2.

601-1 Continuing Enrollment. For graduate students who have not completed the Program and are in the process of their Master's project. The student must have completed all other program requirements to be eligible to register for this course. Concurrent enrollment in any other courses is not permitted. S/U or DEF grades only. Prerequisite: Completion of all program coursework except PA 599.

PHYSICS

www.physics.siu.edu/index.htmphysics@physics.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Ali, Naushad, Professor, Ph.D., University of Alberta, Canada, 1984; 1986.
Aouadi, Samir, Assistant Professor, Ph.D., University of British Columbia, 1994; 2002.
Byrd, Mark, Assistant Professor, Ph.D., University of Texas at Austin, 1999; 2003.
Calbi, Maria de las Mercedes, Assistant Professor, Ph.D., University of Buenos Aires, Argentina, 1999; 2003.
Cutnell, John D., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1967; 1968.
Gaitan, Frank, Associate Professor, Ph.D., University of Illinois at Urbana-Champaign, 1992; 1999.
Gruber, Bruno J., Professor, *Emeritus*, Ph.D., University of Vienna, Austria, 1961; 1972.
Henneberger, Walter C., Professor, *Emeritus*, Ph.D., Gottingen University, Germany, 1959; 1963.
Johnson, Kenneth W., Professor, *Emeritus*, Ph.D., Ohio State University, 1967; 1970.
Kolmakov, Andrei A., Assistant Professor, Ph.D., Kurchatov Institute, Moscow, Russia, 1996; 2005.
Malhotra, Vivak, Professor, Ph.D., Kanpur University, India, 1978; 1984.

Malik, F. Bary, Professor, *Emeritus*, Ph.D., Gottingen University, 1958; 1980.
Masden, J. Thomas, Associate Professor, Ph.D., Purdue University, 1983; 1984.
Migone, Aldo D., Professor and *Chair*, Ph.D., Pennsylvania State University, 1984; 1986.
Sanders, Frank C., Jr., Associate Professor, *Emeritus*, Ph.D., University of Texas, 1968; 1969.
Saporoschenko, Mykola, Professor, *Emeritus*, Ph.D., Washington University, 1958; 1965.
Silbert, Leonardo, Assistant Professor, Ph.D., University of Cambridge, 1998; 2006.
Stadler, Shane, Assistant Professor, Ph.D., Tulane University, 1998; 2001.
Talapatra, Saikat, Assistant Professor, Ph.D., Southern Illinois University, Carbondale, 2002; 2007.
Tsige, Mesfin, Assistant Professor, Ph.D., Case Western Reserve University, 2001; 2005.
Watson, Richard E., Professor, *Emeritus*, Ph.D., University of Illinois, 1938; 1958.

The Department of Physics offers graduate programs leading to the Master of Science degree with a major in physics and to the Doctor of Philosophy degree in Applied Physics.

This program requires a \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Physics. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Science

In order to be considered for admission into the Master of Science program, students must have a baccalaureate degree in Physics, or equivalent. Applicants for admission to the Master's degree program are strongly encouraged to submit GRE scores together with other application materials.

In addition to the general requirements of the Graduate School for the Master of Science degree, the student must complete PHYS 500a (or mathematics equivalent), 510, 520a, b, and 530a, b.

Other specific requirements for the Master's degree are as follows:

A thesis is required, based upon not more than six nor less than three semester hours of 599- level credit. The 599

credit requirement is in addition to the minimum of 15-hour requirement at the 500 level as stated in this catalog and should be distributed preferably over several terms of enrollment.

Each candidate for an M. S. degree is required to pass an examination, written or oral or both, covering graduate work including the thesis; the examination is administered by the student's thesis committee.

Each candidate for an M.S. degree is required to earn one credit in PHYS 581 by lecturing in the graduate seminar. An oral thesis defense satisfies this requirement.

Doctor of Philosophy in Applied Physics**Program Description and Objectives:**

The Department of Physics offers a graduate program at the doctoral level leading to the Ph.D. degree in Applied Physics. The Applied Physics doctoral program is designed to provide advanced studies both in the application of the concepts and methods of physics to various research areas, including: materials, nanoscience and nanotechnology, quantum computing, computational physics, condensed matter physics, magnetism, thin films, and in the application of the methods and techniques of physics to the study of industrial processes and products. The Applied Physics Ph.D. provides students with broad, in-depth knowledge of the fundamentals of those areas of physics relevant to applications, as well as with advanced

specialized knowledge in applied areas. The ultimate goal of this program is to produce graduates that are competent scientific researchers in Applied Physics, i.e., researchers that are capable of initiating and completing an independent investigation in a specific sub-field of Applied Physics. The graduates of this program will be able to fill the needs of academia, industry and government in the area of Applied Physics.

Admissions

Applicants will be admitted into the Applied Physics Ph.D. following one of three routes:

1. Direct admission: this option requires the applicant to have completed a Bachelor's degree in Physics (or its equivalent) with a grade point average of at least 3.25 (in exceptional cases the Department may solicit the Graduate School to waive this requirement).
2. Accelerated admission: students are admitted into the Masters' degree program and after one semester they can be considered for admission into the doctoral program if they show exceptional research potential and have accumulated a GPA of 3.25.
3. Regular admission: for students who have completed a Master's degree in Physics or equivalent and have accumulated a GPA of 3.25 in graduate level courses (in exceptional cases the Department may solicit the Graduate School to waive this requirement). The students obtaining their Masters' degree at SIUC will have satisfied most of the core course requirements for the Applied Physics Ph.D.

All applicants for admission to the doctoral program in Applied Physics must submit Graduate Record Examination scores together with other required application materials.

Course Requirements

In addition to the general requirements of the Graduate School, the student must complete a sequence of Required Basic Core Courses that includes:

- Physics 510 Classical Mechanics
- Physics 520 A Electromagnetic Theory
- Physics 530 A Quantum Mechanics
- Physics 545 A Statistical Mechanics
- Physics 565 Solid State Physics

In addition, students are required to complete *one* additional course from those in the following list:

- Physics 550 Computational Physics
- Science 501 Scanning Electron Microscopy
- Science 502 Transmission Electron Microscopy
- Physics 575 Special Topics in Physics: Magnetism and Magnetic Materials
- Physics 575 Special Topics in Physics

- Physics 575 Special Topics in Physics: Spectroscopy of Materials
- Physics 575 Special Topics in Physics: Surface Science
- Physics 575 Special Topics in Physics: Quantum Computing
- Physics 575 Special Topics in Physics: Hybrid Materials
- Physics 575 Special Topics in Physics: Advanced Optics

After completing the Required Basic Core courses, doctoral students in the Applied Physics Ph.D. will be required to complete another 9-credit hours of 500-level elective courses that are to be selected from a list of electives approved by the Department. The following courses are not allowed to count as electives: Physics 599 (Thesis), 600 (Dissertation), and 601 (Continuing Enrollment).

Starting no later than the beginning of the third semester in the program, students will be required to enroll for two consecutive semesters in Physics 570, a 3-credit hour per semester Special Project course.

In addition to the above-described course-work, while working on their dissertation, the students must complete 24 credit hours of Physics 600 (Dissertation) in no less than two academic years of full-time work.

Admission to Candidacy:

- i. To be admitted to candidacy, the prospective doctoral candidate must have completed the basic core curriculum in Applied Physics with a grade point average of at least 3.25 (out of 4).
- ii. To be admitted to candidacy, the prospective doctoral candidate must pass a Qualifying Examination. Students are expected to take the Qualifying Examination by the end of their third semester in the program. The Qualifying Examination includes written examinations in Quantum Mechanics, Classical Mechanics, Statistical Mechanics, and Electromagnetic Theory. Upon successful completion of these exams, the Department will request the Graduate School to admit the student to candidacy for the doctoral degree.

The Qualifying Examination is prepared by an examination committee appointed by the Chair. The examination committee prepares and administers the Qualifying Examination for all doctoral students on a regular schedule. If the candidate is unsuccessful in the Qualifying Examination, the committee, following the criteria listed below, will decide whether to allow the candidate to repeat the entire examination or any part of it. In arriving at their decision, committee members will take into consideration the overall performance of the student in the courses he/she has taken up to the time of the Qualifying Examination, the performance in the Qualifying

Examination itself (i.e., how poor was the student's performance), and they will get input from the student's research advisor (if he/she has one at the time of the exam) to evaluate what is the likelihood that the student will successfully complete doctoral work. If a student gets a score below 40% in the Qualifying Examination, and has below average results, in the committee's estimation, in the other two indicators (courses and research activity), that student will not be allowed to repeat the Qualifying Examination.

In any case, the Qualifying Examination, in whole or in part, may not be taken more than two times. The one exception to the above rule is that students who so desire can have a "free try" at the Qualifying Examination by taking it at the beginning of their first semester in the program, without this instance counting as one of the two allowed opportunities to take the exam. Should they pass, such students could not be admitted to candidacy until the Graduate School's twenty-four (24) hour residency requirement is met.

Dissertation Committee and Dissertation Examination. No later than six months after admission to candidacy, the student will request the appointment of a dissertation committee to supervise the student's dissertation. This committee will include five faculty members, with at least

Courses (PHYS)

420-3 Electricity and Magnetism II. Induced electromotive force, quasisteady currents and fields, Maxwell's equations, electromagnetic waves and radiation, with applications. Prerequisite: 320 with grade of C or better.

424-4 Electronics for Scientists. Coordinated two-hour lecture and four-hour laboratory study of electronics. Emphasis is on overall modern electronics and its applications in the experimental research laboratory setting. Topics include DC and AC circuit theory, measurement techniques, semiconductor active devices, operational amplifiers and feedback, digital circuits, Boolean algebra, microprocessors and large scale integration, digital to analog and analog to digital conversion, and data acquisition. Prerequisite: 203b or 205b and Mathematics 111 with grade of C or better.

425-3 Solid State Physics I. Structure of a crystalline solid; lattice vibrations and thermal properties; electrons in metals; band theory; electrons and holes in semiconductors; opto-electronic phenomena in solids; dielectric and magnetic properties; superconductivity. Prerequisite: 310, 320, and 430 with grade of C or better.

428-3 Modern Optics and Lasers. Properties of electromagnetic waves in space and media, polarization and interference phenomena and devices, electro- and magneto-optic effects, optical gain and lasers. Prerequisite: 420 with grade of C or better.

430-3 Quantum Mechanics I. An introduction to quantum mechanics including its experimental basis and application

one from outside the Department of Physics, at least one doing research in theoretical physics, and at least one doing research in experimental physics. The majority of the committee shall consist of faculty members from the Department of Physics. The committee will be chaired, in most cases, by the student's dissertation supervisor. The committee will meet within two months after its formation to determine if any specific course-work, beyond the core curriculum, is to be required of the student, and to determine if any special requirements might be appropriate for the student's particular research area. At this time (i.e., no later than eight months after admission to candidacy), the committee will be given a formal, written dissertation proposal and an oral presentation on the proposed research by the student.

Dissertation Defense. Upon completion of a dissertation demonstrating the student's ability to conduct independent research, the dissertation committee will administer a final oral examination. This oral examination shall consist of a defense of the dissertation. Upon the satisfactory completion of both the dissertation and the final examination, the committee will recommend the student for the doctoral degree.

in atomic physics. Prerequisite: 205c, 310 and 320 with grade of C or better. Prior or concurrent enrollment in 410 and 420 is desirable.

431-3 Atomic and Molecular Physics I. Atomic spectra and structure; molecular spectra and structure. Prerequisite: 430 with grade of C or better.

432-3 Nuclear Physics I. Basic nuclear properties and structure; radioactivity, nuclear excitation, and reactions, nuclear forces; fission and fusion. Prerequisite: 430 with grade of C or better.

440-3 Applications of Quantum Mechanics. Applications of quantum mechanics to include time-independent and time-dependent perturbation theory, variational methods, introduction to solid-state physics and materials. Prerequisite: PHYS 430 with a grade of C or better.

445-3 Thermodynamics and Statistical Mechanics. Laws of thermodynamics; principles and applications of classical and quantum statistical mechanics; introduction to kinetic theory of matter. Prerequisites: Physics 205c and 301 both with a grade of C or better; Math 251 with grade of C or better.

450-1 Modern Physics Laboratory. Introduces students to experimental research and encourages them to develop and carry out experiments. Prerequisite: 205c with grade of C or better.

458-2 Laser and Optical Physics Laboratory. Properties of laser beams and resonators, fluorescence and two photon spectroscopy, diffraction, Fourier transformation

and frequency filtering, electro- and magneto-optic modulation, fiber propagation and related experiments. Prerequisite: 428 with a grade of C or better.

470-1 to 3 Special Projects. Each student chooses or is assigned a definite investigative project or topic. Prerequisite: 310, 320 or consent of instructor.

475-3 Special Topics in Physics. These courses are advanced in special topics in physics designed to enable undergraduate and graduate students to become well-versed in a particular and current research area of physics with the intention of preparing them for future research and/or industrial applications. They are offered as the need arises and interest and time permit. Students are required to give presentation. Restricted to: consent of instructor.

500-6 (3,3) Mathematical Methods in Physics. Vector spaces and operators in physics. Hilbert spaces and complete orthonormal sets of functions. Elements and applications of the theory of analytic functions. Methods for the solution of partial differential equations of physics.

510-4 Classical Mechanics. Generalized coordinates and forces. Lagrangian, Hamiltonian, and variational formulations of mechanics. Central forces, oscillations; normal modes of molecular systems.

520-6 (3,3) Electromagnetic Theory. Determination of static, electrostatic, and magnetostatic fields. Microscopic and macroscopic theory of insulators and conductors. Maxwell's equations; radiation, propagation and scattering of electromagnetic waves. Electrodynamics and special theory of relativity. Selected topics. .

530-6 (3,3) Quantum Mechanics II. Basic principles; the harmonic oscillator and the hydrogen atom; scattering; approximation and perturbation methods; spin, statistics.

531-6 (3,3) Advanced Quantum Mechanics. Quantum theory of radiation; applications of field theory to elementary particles; covariant quantum electrodynamics; renormalization; special topics. Content varies somewhat with instructor. Prerequisite: 530 and consent.

535-6 (3,3) Atomic and Molecular Physics II. Recent experimental methods in atomic and molecular spectroscopy with applications. Detailed quantum mechanical and group theoretical treatment of atomic and molecular systems. Reactions between atomic systems. Prerequisite: consent of instructor.

545-6 (3,3) Statistical Mechanics II. Principles of classical and quantum equilibrium statistics; fluctuation phenomena; special topics in equilibrium and non-equilibrium phenomena.

550-3 Computational Physics. Using modern computers to solve physics problems. Integration of ordinary and partial differential equations, interpolation and extrapolation, finite element analysis, linear and nonlinear equations, eigensystems, optimization, root finding, Monte Carlo simulations, etc.

560-6 (3,3) Nuclear Physics II. Fundamental properties and systematics of nuclei, scattering theory, nuclear two-body problem, nuclear models, nuclear many-body

problem, electromagnetic properties of nuclei, radioactivity, nuclear reactions. Prerequisite: 530 and consent of instructor.

565-6 (3,3) Solid State Physics II. Fundamental concepts in solid state physics. Lattice vibrations, band theory of solids, the Fermi surface, dynamics of electrons. Transport, cohesive, optical, magnetic and other properties of solids. Prerequisite: consent of instructor.

570-1 to 36 Special Projects in Physics. Each student works on a definite investigative topic under the supervision of a faculty sponsor. The projects are taken from the current research in the department. Resourcefulness and initiative are required. Graded *S/U* only. Prerequisite: consent of instructor.

571-6 (3,3) X-Ray Diffraction and Electron Microscopy. (See Mechanical Engineering 504.)

575-1 to 12 (1 to 4 per topic for a maximum of three topics) Special Topics in Physics. The courses reflect special research interests of the faculty and current developments in physics. They are offered as the need arises and interest and time permit. Students are required to give presentations. Prerequisite: consent of instructor.

581-1 to 3 (1,1,1) Graduate Seminar. Lectures on special topics by students, faculty, or invited scholars; participation is required of all graduate students. For credit each student may present a seminar in the form of a lecture on a theoretical or experimental topic, a demonstration experiment or apparatus critique. Graded *S/U* only.

598-1 to 50 (1 to 12 per semester) Research. Maximum credit 50 hours. Graded *S/U* only. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 30 Dissertation. Minimum 24 credit hours required for Ph.D degree. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

699-1 Postdoctoral Research. One credit hour per semester. Concurrent enrollment in any other course is not permitted. Prerequisite: must be a Postdoctoral Fellow.

PHYSIOLOGY

(See Molecular, Cellular and Systemic Physiology for program description.)

PLANT BIOLOGY

www.plantbiology.siu.edu/
plant-biology@plant.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Anterola, Aldwin M., Assistant Professor, Ph.D., Washington State University, 2001; 2005. Metabolic pathways, Medicinal compounds, Nutraceuticals, biosynthesis of natural products.

Ashby, William C., Professor, *Emeritus*, Ph.D., University of Chicago, 1950, 1960.

Baer, Sara, Associate Professor, Ph.D., Kansas State University, 2001; 2004. Ecosystem ecology, nutrient cycling, restoration ecology, experimental design.

Battaglia, Loretta, Associate Professor, Ph.D., University of Georgia, 1998; 2003. Community ecology, wetland ecology, invasive species, climate change, multivariate methods.

Bozzola, John J., Professor and *Director*, SIU Integrated Microscopy and Graphics Expertise (IMAGE), Ph.D., Southern Illinois University Carbondale, 1975; 1983. Electron microscopy; cytology; microbiology.

Crandall-Stotler, Barbara, Professor, *Emerita*, Ph.D., University of Cincinnati, 1968; 1970.

Ebbs, Stephen, Associate Professor, Ph.D., Cornell University, 1997; 1999. Plant physiology. Ecotoxicology, biogeochemistry of environmental contaminants, phytoremediation, and other phytotechnologies.

Fralish, James S., Associate Professor, *Emeritus*, Ph.D., University of Wisconsin, 1970; 1969.

Geisler, J.B. Matthew, Assistant Professor, Ph.D., The Ohio State University, 1999; 2006. Gene expression and protein interaction patterns, mathematical gene modeling, *Arabidopsis*, yeast and *Drosophila* interactomes.

Geisler-Lee, Jane, Assistant Professor, Ph.D., The Ohio State University, 2002; 2007. Systems biology, cell wall, suberin, *Onoclea sensibilis*, genomics, transcriptomics, metabolic pathways, sporogenesis, rhizome development.

Gibson, David J., Distinguished Professor, Ph.D., University of Wales, 1985; 1992. Botany, plant ecology, population ecology, community ecology, grasslands, forests, southern Illinois prairie, agroecology, invasive species.

Klubeck, Brian P., Professor, Ph.D., Utah State University, 1977; 1978. Soil microbiology and biochemistry; microbial ecology.

Lightfoot, David A., Professor, Ph.D., University of Leeds, 1985; 1991. Biotechnology (molecular); nitrogen assimilation; genetics and development.

Matten, Lawrence C., Professor, *Emeritus*, Ph.D., Cornell University, 1965; 1965.

Mohlenbrock, Robert H., Distinguished Professor, *Emeritus*, Ph.D., Washington University, 1957; 1957.

Nickrent, Daniel L., Professor, Ph.D., Miami University (Ohio), 1984; 1990. Plant systematics and molecular evolution; biology of parasitic flowering plants.

Pappelis, Aristotel J., Professor, *Emeritus*, Ph.D., Iowa State University, 1957; 1960.

Renzaglia, Karen, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1981; 2003. Botany, Plant Morphology, land plant phylogeny, plant anatomy, ultrastructure, morphogenesis, bryophytes, pteridophytes, and spermatogenesis.

Richardson, John A., Associate Professor, *Emeritus*, M.F.A., Ohio University, 1969; 1969.

Robertson, Philip A., Professor, *Emeritus*, Ph.D., Colorado State University, 1968; 1970.

Sipes, Sedonia D., Associate Professor, Ph.D., Utah State University, 2001; 2001. Plant-insect interactions, pollination ecology, evolutionary ecology, chemical ecology, and systematics. **Stotler, Raymond E.**, Professor, *Emeritus*, Ph.D., University of Cincinnati, 1968; 1969.

Sundberg, Walter J., Professor, *Emeritus*, Ph.D., University of California at Davis, 1971; 1972.

Tindall, Donald R., Professor, *Emeritus*, Ph.D., University of Louisville, 1966; 1966.

Ugent, Donald, Professor, *Emeritus*, Ph.D., University of Wisconsin, 1966; 1968.

Vitt, Dale H., Professor and *Chair*, Ph.D., University of Michigan, 1970; 2000. Peatland ecology, boreal forest ecology, landscape pattern, ecology and systematics of mosses.

Wood, Andrew J., Professor, Ph.D., Purdue University, 1994; 1996. Botany, biotechnology, biochemistry, desiccation, drought, genetics, horticulture, molecular biology, plant biology, plant physiology, stress.

Yopp, John H., Professor, *Emeritus*, Ph.D., University of Louisville, 1969; 1970

 The Department of Plant Biology offers a graduate program leading to the degrees of Master of Science, Master of Science in Biological Sciences, Master of Science in Education in the Biological Sciences, and the Doctor of Philosophy. The first master's degree was granted in 1948, and the first Ph.D. degree in 1965.

An advisory committee of faculty members from plant biology as well as other departments help design individualized programs to meet the specific educational goals and career aspirations of each student. The broadly diversified faculty of the department provide research emphases in ecology and environmental science, systematics and biodi-

versity, and molecular biology and physiology. Graduate degrees in plant biology will be awarded to students in recognition of their ability to do independent research as evidenced by the acceptance of a thesis or dissertation and the demonstration of competent scholastic ability.

The Department of Plant Biology is housed in various major teaching and research facilities on the campus of Southern Illinois University Carbondale (SIUC) including Life Science II, Life Science III and Forest Science as well as the Electron Microscopy Building. Faculty members provide research and laboratory facilities for students. The department supplies centralized facilities including laboratories for basic computing, Geographic Information Systems (GIS), and molecular biology, as well as herbaria, growth chambers, field research centers and greenhouses. Excellent cooperative research arrangements are available for activities including electron microscopy, chemical analyses and research photography. Southern Illinois University is strategically located in the transition zones of several North American biomes and is within a one hour drive to spectacular natural areas including Pine Hills Research Natural Area, Cypress Creek Bioreserve, Garden of the Gods, and Little Grand Canyon.

Admission

Applications should be sent to the Director of Graduate Studies of the department and must include a completed application form, three letters of recommendation, official transcripts of all institutions of higher learning attended, GRE scores including the verbal, quantitative and analytical portions of the examination and grade point average. Students must meet both Graduate School and Departmental admission requirements. Financial assistance is available on a competitive basis. To be considered for financial support a financial assistance form must also be submitted. Acceptance to the department is contingent on availability of faculty to advise the student and research space and facilities. International students whose native language is not English must have a minimum of 550 or the equivalent electronic score on the TOEFL test.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Plant Biology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIUC, and payable to a U.S. Bank. Applicants for the Master's degree must have a Bachelor Degree (or equivalent) in a life science. A student who does not meet these requirements may petition for admission to the department, or register as a regular nondeclared graduate student. Either prior to admission or during their programs, students must complete a course in each of the following categories: 1) plant systematics or plant diversity, 2) plant physiology, cell biology or molecular biology, and 3) plant ecology or environmental science. A course in plant morphology or

plant anatomy is strongly recommended. Up to 8 credit hours of courses may be taken under the direction of other Departments within the University.

Applicants to the Ph.D. program must have a plant sciences related Master's degree (or equivalent). Exceptions to this rule include Direct Entry or Accelerated Entry options described below. Either prior to admission or during their programs, students must complete a course in each of the following categories: 1) plant systematics or plant diversity, 2) plant physiology, cell biology or molecular biology, and 3) plant ecology or environmental science. A course in plant morphology or plant anatomy is strongly recommended. All deficiencies, as determined by the student's advisory committee, must be removed during the first year by taking appropriate courses (graduate or undergraduate) with grades of B or better in each course. Criteria for admission include GPA (3.25 or higher), GRE scores, letters of recommendation, transcripts and availability of faculty, space and facilities. To be admitted into the program, at least one faculty member must be willing to serve as major advisor or co-advisor if the student desires to work in the Forestry or Plant, Soil and Agricultural Systems departments. Students desiring financial assistance for Fall semester admission should note that the deadline for fellowship and assistantship applications is January 15th. Application forms are available from the Director of Graduate Studies in the Department of Plant Biology or the Departmental website.

Accelerated Entry into the Doctoral Program

A student who enters a master's program in plant biology may, if deemed capable, be permitted to apply to be accelerated into a program leading directly to a Ph.D. degree, subject to the following conditions and specifications. In order to qualify for consideration, each endorsed student must: (a) have been in the SIUC plant biology graduate program no less than one or more than two academic terms when proposed, (b) have a graduate grade point average of 3.75 or better, (c) have no grade in any course (conditional or otherwise) in his/her graduate record of less than B and (d) be deemed by the Evaluation and Awards Committee as having superior capabilities.

Once advanced into the doctoral program by the Graduate School, the student shall be eligible to qualify for graduate assistance totaling no more than 60 months. Once in the doctoral program, the student is subject to all of the academic, retention, and exit requirements for a regular doctoral program.

If for any reason, a student who has been admitted into the accelerated entry program fails to complete the doctoral program successfully that student shall not automatically be re-admitted into the master's program. Instead, the student may (if so desired) make formal application for admission into the master's program in plant biology.

Direct Entry into Ph.D. Degree Program

Students with outstanding academic preparation and a baccalaureate degree in the plant sciences or related field may be admitted directly into the doctoral program prior to beginning their program at SIUC. Students admitted under this option will take a written comprehensive diagnostic examination prior to the first week in the program. The examination is constructed by a committee of faculty members from the student's department and is administered by the Departmental Director of Graduate Studies. A student deemed to have deficiencies based on the outcome of this diagnostic qualifying exam must satisfy these deficiencies by taking appropriate courses within the first year of study following the first meeting of his/her graduate advisory committee. When admitted to the doctoral program the student will be eligible to qualify for graduate assistance totaling no more than 60 months. In the event of failure of the diagnostic examination, the student has the option of entering the department's master's degree program.

Advisement

Following admission to the department and before registration for course work, the student must consult a staff member representing the field of major interest or, if this is unknown, the Director of Graduate Studies of the department, for assistance in planning the first registration. At registration, deficiencies and specific departmental requirements must be considered first.

Within the first semester of the program, the student must select a faculty member who is willing to serve as the major adviser. The major adviser in consultation with the student will then select appropriate faculty members to comprise the advisory committee. For the master's degree program, a minimum of three people shall make up the advisory committee, two of whom must be voting members of the Plant Biology Department. The advisory committee for the Ph.D. degree program will be composed of at least five people, three of whom must be voting members of the plant biology faculty and one who must be from outside the department. The Director of Graduate Studies is an ex-officio member of each graduate advisory committee. The duties of the advisory committee are to:

- (1) plan, approve and file with the Director of Graduate Studies the program of study, and advise the student on his/her research program especially during the first semester of the student's program;
- (2) read, evaluate and file with the Director of Graduate Studies the student's research prospectus by the end of second semester of the student's program;
- (3) monitor the student's progress and make any necessary changes in the program, while providing advice and direction on the student's research problem;
- (4) annually assess the student's progress and file recommendations as to retention or dismissal from

the program with the Evaluation and Awards Committee;

- (5) participate in and grade the written and oral preliminary examinations for the Ph.D. degree;
- (6) read and evaluate the student's thesis or dissertation and make suggestions for improvement; and
- (7) administer the defense and final examination of the thesis or dissertation.

In either degree program, following establishment of the advisory committee and before advance registration for the second term, the student must meet with the advisory committee to discuss the program of courses for the degree and plans for research. In this regard, the committee is empowered to require work in areas with which the student's interests are allied. The advisory committee will advise the student on the selection of readings on general and historical topics of importance that may not be encountered in formal courses. Copies of the approved program of courses and the plans for research must be placed in the departmental files by the beginning of the second semester of study. An approved research prospectus must be completed and filed with the Director of Graduate Studies by the end of the second semester.

Research and Training Assignments. Research is required of each student in the program. In addition, each term the student must be engaged in a training assignment which supplements formal course work through professional activities such as research or teaching. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from ten to twenty hours of service per week.

Academic Retention

The general regulations of the Graduate School with respect to academic retention shall be followed. In addition, no course in which the grade is below *C* shall count toward the degree or fulfillment of any requirement, but the grade will be included in the grade point average. No more than five hours of *C* work in graduate courses will count toward the degree.

All students are subject to regular review by the department's Evaluation and Awards committee. Those not attaining the minimum acceptable academic standards or who in any way fail to meet any other scheduled requirements or standards may be dropped from the program.

Program and Course Requirements

All master's degree students must earn a minimum of 3 hours credit in graduate seminars (PLB 580, 589, 554 or equivalent), at least 1 of which must be in departmental seminar (PLB 580). All Ph.D. students must earn a minimum of 2 credit hours in graduate seminar (PLB 580, 589, 554 or equivalent) each year of residence, at least 1 of which must be in departmental seminar (PLB 580). Additional seminar requirements can be mandated, if deter-

mined to be appropriate, by a student's Advisory Committee.

Appeals

Appeals for variations from the departmental graduate program must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from a majority of the total plant biology graduate faculty.

Appeals for changes in the student's graduate advisory committee or changes in the original program must be approved in the following order: (1) approval from adviser, (2) approval from remaining members of the student's advisory committee.

Student appeals for change of major adviser must be presented in writing to the plant biology graduate faculty meeting as a committee of the whole. Appeals must receive approval from the Evaluation and Awards Committee.

The Master's Degree

A minimum of 30 hours of graduate credit is required beyond the bachelor's degree, including no less than 22 hours of plant biology courses, 9 of which may be individualized instruction courses, including 3 hours of seminar, and up to 6 (minimum of 3) hours of thesis. A graduate minor of at least 10 graduate hours may or may not be required; this is to be determined by the student and the advisory committee. At the time of completion of the thesis, the student must schedule a public seminar presentation of the thesis material and a comprehensive examination over the thesis and related subject matter.

The Ph.D. Degree

Course work for the degree shall consist of a minimum of 20 semester hours at the 400 and 500 levels in the plant biology program or related disciplines, excluding seminar, readings, research, dissertation, and research tool requirements. Students will take either prior to or during their program, courses in all of the following categories: 1) plant systematics, 2) plant physiology, cell biology or plant molecular biology, and 3) ecology or environmental science. Courses in plant anatomy and genetics are strongly recommended. The student may select a secondary specialization once the major area has been declared. A secondary specialization is comprised of courses taken from departments or programs other than Plant Biology and may not count towards the 20 semester hours required for the degree. A program of study, including courses contributing to the secondary specialization, must be approved by the student's advisory committee and be submitted to the Director of Graduate Studies by the end of the first semester of the student's program. Changes made after the first semester of the student's program must be approved by the student's advisory committee.

Tools. The student shall demonstrate knowledge in two research tools approved by the student's advisory committee. A tool is defined as training in laboratory (or field) methods, instrumentation, technology, or communication skills including languages that are integral to the pursuance of research. Specific tool requirements will be determined by the student's advisory committee. Courses used to satisfy tools requirements shall not be applied toward the total number of hours required for the degree. The foreign language requirement can be met by earning a grade of *B* or better in appropriate 400 level course (Latin, French, German, Spanish or Russian). The requirement can also be met by passing an Educational Testing Service (ETS) examination in French, German, Spanish or Russian. The ETS passing level for French and German is 465 and for Russian and Spanish it is 440. A statistical tool requirement can be satisfied by earning a *B* or better in one or more graduate level statistics courses. Course recommendations for statistical tools include Quantitative Plant Ecology (PLB 444), Biostatistics (PLB 557), Advanced Biostatistics (PLB 558). Other courses can be used to satisfy a statistical tool requirement if deemed acceptable by the student's advisory committee. Tool requirements other than language or statistics may be completed by earning a *B* or better in courses on file with the Director of Graduate Studies. With the approval of the student's advisory committee, courses not on the official list can also be used to satisfy a tool requirement.

Preliminary Examination. The preliminary examination will consist of two parts, a written examination and an oral examination. The written and oral examinations shall emphasize competence in:

- (1) One of the fields of expertise within the Department: plant systematics and plant diversity; plant physiology, cell biology and molecular biology; or plant ecology and environmental science,
- (2) The student's designated area of specialization (as determined by the advisory committee), and
- (3) The student's research tools (see above) and a basic, general knowledge of Plant Biology (as defined by the PLB Faculty). These three components of the written examination will be administered as separate entities. Subject matter covered in the two specialization examinations may be excluded from the general component at the discretion of the advisory committee.

The student, with the approval of his/her graduate advisory committee, will register with the Director of Graduate Studies to take the examination. The Director of Graduate Studies will then appoint a faculty member who is not on the student's advisory committee to chair the examination committee (EC) and administer both the written and oral examination. The Chair of the examination committee will solicit questions from the student's advisory committee and from the faculty at large. Upon receipt of these questions, the Chair of the examination committee will call the com-

mittee together to construct and plan the written part of the examination. The student will be allocated one eight-hour block of time to complete each of the three components of the examination. The student may request additional time.

The student must pass all parts of the written examination to proceed to the oral examination. Pass means that the student has demonstrated through clear written statements a good understanding of the topics presented in the written examination. A vote of the EC to pass or fail must be taken immediately following the grading of the written examination. Passing of the written examination will be determined by simple majority vote of the EC. If the student fails one or more of the three components of the examination, he/she must be reexamined on the failed components. If the student fails any part(s) of the general examination, he or she must be reexamined on the failed part(s). In consultation with the advisory committee, the EC chair will schedule and administer the reexamination. The reexamination may not be taken during the same academic term. The student must pass the written examination by the second attempt to continue in the program.

Following passage of the written portion of the examination, the EC chair will schedule and administer the oral portion of the examination. The oral examination must be scheduled not sooner than 10 working days nor more than 30 working days from the completion date of the written examination. The EC chair will not participate in the questioning of the student and does not have a vote regarding the proceedings. The oral preliminary examination must be announced at least 10 working days before the examination is to be given. The examination may only be scheduled when classes are in session, including finals week. The examination shall last at least two hours and not more than four hours and should be scheduled to allow attendance of a maximum number of faculty members from the student's department and all of the preliminary examination committee members. The student's answers to the written examination will be made available to the graduate faculty (upon request) before the oral part of the preliminary examination. All attending graduate faculty members will be given the opportunity to express their opinion on the examination. A

vote on performance in the oral examination must be taken immediately following completion of the examination. A pass requires a vote with no more than one dissenting member of the preliminary examination committee, and may have conditions. If the vote is pass, then two levels may be recognized: Pass and Pass with Distinction. A student will be allowed two attempts to pass the oral preliminary examination. Should a student fail a second attempt to pass the preliminary examination, he/she will be dropped from the program. Doctoral students entering the program with a master's degree must take the preliminary exam by the end of 30 months and must pass the preliminary examination and be admitted to candidacy by the end of 36 calendar months after first registering in the doctoral program.

Final Examination (Dissertation Defense). The final examination will be oral. It must be preceded during that semester by a public seminar on the student's research findings. The student's advisory committee will notify the Director of Graduate Studies of its recommendation for the date of the final examination at least two weeks prior to the seminar. The seminar and examination must be announced at least 10 working days before the seminar and examination. The seminar and examination must be held when classes are in session, including finals week. The final examination shall last for no more than 3 hours. It is to cover the dissertation and related subject matter. Passage of the final oral examination should be construed to mean there shall be no more than one dissenting vote of the advisory committee. Should a student fail a second attempt to pass the final examination, she/he will be dropped from the program.

Certificate in Plant Ecology

The Department of Plant Biology participates in the Certificate in Plant Ecology to prepare candidates for the Ecological Society of America's Associate Ecologist Certification. For more information on the Certificate program, please see the section on Certificate Programs in Chapter 1.

Courses (PLB)

For all field courses in plant biology, students will be assessed a transportation fee. In addition, certain courses may require the purchase of additional materials and supplies, generally \$1 to \$5 in total cost.

400-4 Plant Anatomy. An introduction to the differentiation, diversification and structure of plant tissues and organs, with emphasis on the organization of seed plants. Laboratory will include instruction in the techniques of microscopy used in the study of plant structure. Two lectures and two laboratories per week. Lab fee: \$20. Prerequisite: Biology 200b or Plant Biology 200.

405-4 The Fungi. A survey of the fungi — their structure, development, relationships, ecological roles and economic importance. Two lectures and two laboratories. Lab fee: \$15. Prerequisite: Biology 200b or Plant Biology 200 or equivalent; Plant Biology 300 or equivalent recommended.

406-3 Bryology. An introduction to the biology of mosses, liverworts, and hornworts, with emphasis on structure, development, and phylogeny, but also including the study of their genetics, biochemistry, and physiology. Two lectures and one laboratory per week. Lab fee: \$15. Prerequisite: 300.

409-3 Field Mycology. The taxonomy, ecology, and distribution of fungi in southern Illinois and environs with emphasis on techniques of specimen collection, preservation, identification, and recognition. This is a field-based course wherein field trips are made most weeks. Also microscopic examination of living specimens is required. Lab fees are needed for travel and microscope supplies. Prerequisite: Biology 200b or Plant Biology 200; Plant Biology 300 recommended.

410-4 Ecology of Bryophytes. A field-based focus on learning identification of the local flora. Interactions of bryophytes to their environment are examined through lectures, laboratories, and field study. Importance of mosses and liverworts to ecosystems, community analysis, and population interactions are emphasized. Two lecture/laboratories/field trips per week.. Prerequisite:BIOL 307 and PLB 300, or consent of the instructor. Lab Fee: \$30

415-5 Morphology of Vascular Plants. The study of external form, internal structure and relationships of vascular plants. Three lectures and two laboratories per week. Prerequisite: BIOL 200A and BIOL 200B, or PLB 200; PLB 300 and PLB 400 recommended. Lab fee: \$20.

416-3 Limnology. (Same as Zoology 415) Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: Zoology 220a.

419-3 Plant Molecular Biology. (Same as Plant Soil and Agricultural Systems 419, Plant and Soil Science 419) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic- and abiotic-stresses. Prerequisite: junior standing and Biology 305 or Plant and Soil Science 305.

420-3 Techniques in Molecular Biology. Students will gain hands-on experience with current molecular techniques being applied to questions in the plant sciences. These include isozyme electrophoresis, DNA and RNA extraction, restriction endonuclease digestions, Northern blotting, Southern blotting, PCR (polymerase chain reaction) and gene cloning. Students will gain experience in the use of computers in manipulating and analyzing molecular data. Lab fee: \$15. Prerequisite: either Biology 200b or Plant Biology 200, and junior standing or consent of instructor.

421-4 Botanical Microtechnique. Introduction to practical methods of preservation and preparation of plant materials for laboratory and microscopic study. Paraffin and plastic embedding and sectioning techniques, and use of general and histochemical stains stressed. Includes chromosome squashing, whole-mount preparation, photomicrography and other techniques. One lecture and three laboratories per week. Prerequisite: either Biology 200b or Plant Biology 200.

425-5 Mineral Nutrition and Membrane Physiology. (Same as Plant and Soil Science 425; Same as Plant, Soil and General Agriculture 425.) A study of plant mineral nutrition from both the plant and soil perspective and a discussion of membrane transport and water relations phenomena that influence nutrient and ion homeostasis in plants. Prerequisite: PLB 320 or PLSS 409. A \$35 laboratory fee will be assessed.

427-5 Plant Biochemistry. (same as PLSS 427 and PSAS 427).Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Lab fee: \$35. Prerequisite: 320 or consent of instructor.

430-3 Economic Botany. Classification, evolution, domestication, and botanical characteristics of plants useful to people. Every year. Prerequisite: either Biology 200b or Plant Biology 200.

433-4 Introduction to Agricultural Biotechnology. (Same as Plant and Soil Science 433) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: senior standing or consent of instructor.

435-3 Plant-Insect Interactions. (Same as Zoology 435) Plants and insects have played major roles influencing each other's evolutionary diversification. The course will be an evolutionary and ecological examination of the interactions between plants and insects. Topics will include herbivory, pollination, relationships, ant-plant mutualisms, host plant choice, specialized vs. generalization relationships, seed and fruit dispersal, coevolution/cospeciation, and chemical ecology. Prerequisite: Biology 200a and 200b or equivalent, Biology 307 or equivalent.

439-2 Natural Areas and Rare and Endangered Species. Evaluation of the natural area preservation concept with emphasis on how to detect natural areas and methods to preserve them. Emphasis on the rare and endangered species program, its significance and its methodology. Prerequisite: 304, Biology 307.

440-3 Grassland Ecology. This course examines grassland structure and function in relation to various biotic and abiotic factors. Field trips will visit local grasslands. Two lectures and one 4-hour lab per week. Laboratory fee: \$20. Prerequisite: BIOL 307 or consent of the instructor.

443-3 Restoration Ecology. Ecological restoration tests current understanding of ecosystem assembly and function. This course applies ecological theory to restoration, with an emphasis on factors influencing plant community assembly and evaluating restoration success. Two lectures a week and one four-hour lab alternate weeks. Prerequisite: Biology 307 or equivalent.

444-4 Quantitative Plant Ecology. Includes concepts and methods pertaining to the analysis of ecological data. Approaches will include a variety of methods for analyzing

multivariate ecological, diversity, pattern, and spatial data. Laboratory will include the computer application of these concepts and methods to field situations. Laboratory fee: \$15. Prerequisite: 360 or equivalent and Biology 307 or equivalent or consent of instructor.

445-4 Wetland Plant Ecology and Management. (Same as ZOOL 445.) This course provides students with experience in wetland plant ecology with an emphasis in wetland functioning, field sampling and identification of common wetland plants. Lab fee: \$25. Two lectures and one 4-hour lab per week. Prerequisite: either BIOL 200B or PLB 200; and BIOL 307; or consent of the instructor.

447-2 to 6 Field Studies in Latin America. Two to six weeks of intensive field work to acquaint students with the flora and vegetation in various environments of Latin America and with ecological and taxonomic field techniques. Cost varies with type of study and location. Transportation cost: \$80. Prerequisite: advanced standing in one of the biological sciences and consent of instructor.

449-3 Plant Systematics and Evolution. Plant systematic and evolution using traditional and molecular characters. Includes classification methods, phenetics, cladistics, maximum likelihood, and plant molecular evolution. Prerequisite: 304 (or equivalent) or consent of instructor.

450-2 Plant Geography. Plant distributions are examined from both ecological and historical perspectives. Ecological topics include analysis of limiting factors, occurrence of present biomes, and examination of climate/plant interactions. Historical topics include phylogenetic analysis, evolutionary biogeography, and paleo-floras. Two lectures per week. Prerequisite: BIOL 307 or consent of instructor.

451-3 Flora of Southern Illinois. Exposure to the major upland and lowland communities of southern Illinois with an emphasis on the identification, distribution and ecology of the natural and introduced floristic components. This is a field-based course wherein the students travel to local areas for plant identification. Each week, 4-8 hours per weekly session is spent in field work and travel to specific field sites is required via a university vehicle. Lab fee: \$15. Prerequisite: 304 or consent of instructor.

452-4 Plant Population Ecology. The principles and research techniques of plant population ecology including the spatial, age, size and genetic structures of plant populations. The origin of these different kinds of population structure, their influences upon each other and their temporal dynamics. Laboratory fee: \$20. Prerequisite: Biology 307 or consent of instructor.

471-3 Introduction to Systems Biology. The experimental and bioinformatic analysis of large genomic and post-genomic data sets. The goal is integration of gene regulation, protein interaction, metabolite and hormonal signaling molecules into an understanding of basic cellular circuitry networks. Examine redundancy, robustness and decision making in biological sciences. Lab Fee: \$15. Prerequisite: BIOL305 or CS330.

475-3 Advanced Cell Biology. (Same as Zoology 475.) Cell structure at molecular and cytological levels. Includes discussions of research methods, plasma membrane, cell

exterior and recognition, the endomembrane system and related organelles, self-replicating organelles, the cytoskeleton, nuclear structure and function in cell replication, cell differentiation and response, and eukaryotic cell evolution. Prerequisite: Biology 306 or equivalent.

476-2 Advanced Cell Biology Laboratory. (Same as Zoology 476.) Laboratory course to accompany Plant Biology 475. Light and electron microscopy, cell culturing, biochemical methods, and experimental protocols are used to study the structure of cell membranes, intracellular organelles, including the Golgi apparatus, ER, mitochondria, plastids, lysosomes, the cytoskeleton and nucleus. Prerequisite: 475 or concurrent enrollment.

479-3 Plant Variation. Classical and modern plant biosystematics focused at and below the species level. Chromosomal and molecular bases for genetic and phenotypic variation in plants, isolating mechanisms, speciation, hybridization, polyploidy, phlogeography, and conservation genetics will be discussed. Prerequisite: Plan Biology 304 (or equivalent) or consent of instructor.

500-3 Advanced Plant Anatomy. The study of advanced topics in the anatomy of seed plants. Emphasis is on trends in and adaptive nature of evolutionary modifications of anatomical features and the application of anatomical data to plant systematics. Two lectures and one laboratory per week. Prerequisite: 400 and 421 or equivalent.

501-4 (2,2) Research Transmission Electron Microscopy. (See Science 501a, b.)

502-4 (2,2) Research Scanning Electron Microscopy. (See Science 502a, b.)

504-3 Genome Evolution (Same as ZOOL 500). This course introduces the diversity of genomes and the evolutionary forces shaping them. Molecular evolution from the level of single nucleotides to whole genomes will be covered. Prerequisite: consent of instructor.

510-3 Watershed Policy. Decision-making and collaborative governance of watersheds in a social environment structured by socio-economic opportunities and constraints, ethical considerations, legal and policy issues, and use of computers to aid communication and deliver scientific information (models, GIS, and visualization). Case studies of watershed management will illustrate these concepts. Restricted to: Ph.D. students.

520-3 Plant Growth and Development. (Same as Plant, Soil and Agricultural Systems 520) Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Prerequisite: Plant Biology 320 or consent of instructor.

523-3 Watershed Science. (Same as Zoology 523). This course is part the SIU IGERT program and will focus on ecological, geomorphic, and hydrological concepts related to watersheds including hydrograph generation, frequency analysis, erosional and depositional processes, channel geomorphology, water quality and biotic integrity, and structure and function of stream ecosystems. This course will include readings and discussions and will feature guest lecturers from on specific topics. Restricted to graduate students (masters and doctoral).

524-2 Advanced Plant Genetics. (Same as Plant, Soil and Agricultural Systems 524) A consideration of incompatibility systems, paramutation, cytoplasmic inheritance, developmental genetics, and other genetic topics as they occur in higher plants. Prerequisite: Biology 305 or equivalent.

525-2 to 16 (2 to 4, 2 to 4, 2 to 4, 2 to 4) Cell Biology Research Techniques. A special techniques course designed for graduate students specializing in cell studies. Provides instrumentation training, with emphasis on application of the method to a research project. (a) Quantitative Cytology. (b) Immuno-Labeling and Qualitative Histochemistry. (c) Deep Etching Techniques in Electron Microscopy. (d) Cell Fractionation and Biochemical Techniques.

530-3 Plant Ecophysiology. (Same as Plant, Soil and Agricultural Systems 530) A study of the physiological processes that influence the growth, reproduction, adaptation, and geographic distribution of plants. The ecophysiology of plant stress and plant interactions. Prerequisite: PLB 320 or PLSS 409; Biology 307.

533-3 Plant Growth and Morphogenesis. A study of the role of the environmental variables (light, temperature, etc.) and phytohormones in the growth and morphogenesis of intact plants and tissue cultures. The theories of plant organogenesis and the synthesis, translocation, regulation and mode of action of the major classes of phytohormones will be treated in light of the most recent literature. Three lectures per week. Prerequisite: 320 or consent of instructor

534-2 Techniques in Studies of Plant Growth and Development. Instruction in laboratory techniques used in the study of the role of environment and natural plant growth substances in plant morphogenesis. Two two-hour laboratories per week. Prerequisite: 320 or consent of instructor.

545-3 Ecosystem Ecology. Fundamentals of and human modification to atmospheric chemistry and cycling of major nutrients in terrestrial ecosystems are covered in the context of global change. Laboratory exercises provide methodology and analytical approaches to studying ecosystem structure and function. Two lectures a week and one four-hour lab alternate weeks. Lab fee: \$15.

546-2 Nutrient Cycling Methods. Research in ecosystem ecology requires a basic understanding of biochemistry. Analytical methodology used to study pools and transformations of major nutrients in terrestrial ecosystems, applicable to freshwater systems, will be the focus of this laboratory course. Three hour laboratory every other week. Prerequisites: 545 or concurrent enrollment.

547-3 to 8 Tropical Studies in Costa Rica. Credit for field courses taken under the jurisdiction of the Organization for Tropical Studies in Costa Rica. Courses and credits will vary. Prerequisite: approval of OTS Advisory Committee at Southern Illinois University Carbondale.

554-1 to 4 (1,1,1,1) Evolution Seminar (Same as ANTH 554, MBMB 554, ZOOL 554). Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each

semester. Seminar format group discussions and student presentations. Graded S/U. Prerequisite: consent of instructor.

556-3 Phylogenetics (Same as ANTH 554, MBMB 554, ZOOL 556). An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypothesis. Prerequisite: consent of instructor.

557-4 Biostatistics. (Same as Zoology 557) Basic biostatistical procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software.

558-4 Advanced Biostatistics. (Same as Zoology 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap. Mantel tests, BACI designs, MANOVA, repeated measures analysis, and the use of statistical software. Prerequisite: 557 or equivalent, Zoology 557,

570-2 to 3 Graduate Readings in Plant Biology. A course of individually assigned readings in botanical literature. Every semester. Prerequisite: consent of instructor. Graded S/U only.

571-4 Genomics of Eukaryotes. (Same as Plant, Soil and Agricultural Systems 571) Genomics, Proteomics and Bioinformatics are rapidly making important contributions to the life science through biotechnology. An appreciation of the genomic tools is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be explored. Short independent practical projects in genomics, proteomics or bioinformatics will be pursued. Prerequisite: 400 level course in genetics, biotechnology, biochemistry or consent of instructor.

578-3 Population Genetics. (Same as Zoology 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: Zoology 304 or equivalent, and Biology 305 or equivalent.

580-1 to 6 Departmental Seminar. Student presentations and critiques of original research, including presentations by occasional invited speakers. Graded S/U only. Required of all graduate students in residence, when offered.

589-1 to 12 (1 per topic per semester) Seminars in Plant Biology. Discussions of current and historical research and literature in various subject areas of plant biology. (a) Ecology, (b) Molecular and Biochemical Physiology and (c) Systematics and Biodiversity. Graded S/U only.

590-1 to 3 Introduction to Research. General introduction to research techniques. Techniques to be determined by instructor and students. Summer only. Graded S/U only. Prerequisite: consent of instructor; consent of department.

591-2 to 9 Research. Assignments involving research and individual problems. (a) Anatomy; (b) Bryology; (c) Ecology; (d) Morphology; (e) Mycology; (f) Paleobotany; (g) Pathology; (h) Photography; (i) Phycology; (j) Physiology; (k) Systematics. Master's students may use this for their research for their thesis. Summer only. Graded *S/U*. Prerequisite: consent of instructor, consent of department.

599-2 to 9 Thesis. Course to be taken in the preparation of the Master's thesis. Every semester. Prerequisite: consent of instructor. Graded *S/U* only.

600-1 to 36 (1 to 12 per semester) Dissertation. Course to be taken in the research for and in writing of the doctoral dissertation. Every semester. Graded *S/U* only. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

PLANT, SOIL AND AGRICULTURAL SYSTEMS

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COLLEGE OF AGRICULTURAL SCIENCES

Graduate Faculty:

Bond, Jason P., Associate Professor, Ph.D., Louisiana State University, 1999; 2000. Nematology and plant pathology.

Chong, She-Kong, Professor, *Emeritus*, Ph.D., University of Hawaii, 1979; 1979.

Choudhary, Ruplal, Assistant Professor, Ph.D., Oklahoma State University, 2004; 2009. Biosystems Engineering

Diesburg, Kenneth L., Assistant Professor, Ph.D., Iowa State University, 1987; 1989. Turfgrass science.

Doerr, William A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1973; 1965.

Elkins, Donald M., Professor, *Emeritus*, Ph.D., Auburn University, 1967; 1967.

Fakhoury, Ahmad M., Associate Professor, Ph.D., Purdue University, 2001; 2003. Plant-microbial toxicology.

Henry, Paul H., Associate Professor, Ph.D., North Carolina State University, 1991; 1992. Ornamental horticulture.

Hernandez, Jorge D., Assistant Professor, Ph.D., Iowa State University, 2003; 2004. Soil fertility, soil management, urban soils.

Kantartzi, Stella, Assistant Professor, Ph.D., Aristotle University of Thessaloniki, 2006; 2008. Soybean breeding and genetics.

Klubek, Brian P., Professor and *Chair*, Ph.D., Utah State University, 1977; 1978. Soil microbiology.

Legacy, James, Professor, *Emeritus*, Ph.D., Cornell University, 1976; 1977.

Lightfoot, David A., Professor, Ph.D., University of Leeds, 1984; 1991. Agricultural molecular biology and biotechnology.

McGuire, James M., Professor, *Emeritus*, Ph.D., North Carolina State University, 1961; 1993.

Meksem, Khalid, Professor, Ph.D., University of Cologne, Germany, 1995; 2000. Genomics, plant genetics, plant molecular biology and biotechnology.

Midden, Karen L., Professor, M.L.A., University of Georgia, 1983; 1988. Landscape design.

Olsen, Farrel J., Professor, *Emeritus*, Ph.D., Rutgers University, 1961; 1971.

Pense, Seburn L., Associate Professor, Ph.D., Oklahoma State University, 2002; 2003. Agricultural education.

Preece, John E., Professor, *Emeritus*, Ph.D., University of Minnesota, 1980; 1980.

Schmidt, Michael, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1994; 1979. Plant breeding.

Shoup, W. David, Professor, Ph.D., Purdue University, 1980; 1999. Precision farming, global positioning systems.

Stitt, Thomas R., Professor, *Emeritus*, Ph.D., Ohio State University, 1967; 1967.

Stucky, Donald J., Professor, *Emeritus*, Ph.D., Purdue University, 1963; 1970.

Taylor, Bradley H., Associate Professor, Ph.D., Ohio State University, 1982; 1982. Fruit production.

Tweedy, James A., Professor, *Emeritus*, Ph.D., Michigan State University, 1966; 1966. Herbicides and weed control.

Varsa, Edward C., Professor, *Emeritus*, Ph.D., Michigan State University, 1970; 1970. Soil chemistry, fertility, and management.

Wakefield, Dexter B., Associate Professor, Ph.D., Purdue University, 2001; 2001. Agricultural education.

Walters, S. Alan, Associate Professor, Ph.D., North Carolina State University, 1997, 1998. Vegetable production.

Watson, Dennis, Associate Professor, Ph.D., Michigan State University, 1987; 2002. Agricultural systems and information.

Wolff, Robert L., Professor, *Emeritus*, Ph.D., Louisiana State University, 1971; 1972.

Young, Bryan G., Professor, Ph.D., University of Illinois, 1998; 1998. Weed science.

The Department of Plant, Soil and Agricultural Systems offers programs of study leading to the Master of Science degree with a major in plant, soil and agricultural systems with concentrations in the areas of crop, soil, and horticultural sciences; an emphasis in environmental studies in agriculture is also available in each of these concentrations. We offer graduate work in agricultural education and information and agricultural technologies.

Supporting courses in education, communication, engineering, plant biology, microbiology, chemistry, statistics, and other areas essential to research in the student's chosen field may be selected. Supporting

courses are selected on an individual basis by the student and the advisory committee. Once the general field has been selected, the research and thesis may be completed in any one of the many divisions of that field. In field crops, the research may be directed toward crop production, management and precision farming, weeds and pest control, or plant breeding, genetics and biotechnology; in horticulture, the research and thesis may be in landscape design, vegetables, tree-fruits, small-fruits, floricultural and ornamental plants, plant tissue culture, or turf management; in soils, the research may relate to soil fertility, soil physics, soil microbiology, soil chemistry, or

soil and water conservation; in environmental studies, the research may be directed toward water pollution, reclamation of strip-mined soil, or agricultural chemical pollution problems. Often two of these more restricted areas can be combined in one thesis problem.

Agricultural education coursework is designed for instructors in secondary schools, for students preparing for employment at junior colleges, and for those desiring to continue their education by obtaining a Ph.D. degree. Agricultural information coursework is designed to provide graduate training for extension agents, agricultural communication professionals, product-education specialists, and others who are interested in agricultural information processing and transfer to a variety of non-student clientele. Agricultural technologies coursework is designed to offer students interested in technology based systems the opportunity to study one or more of the following areas: (a) power and machinery, (b) product handling, processing, and storage, (c) farm equipment evaluation, and (d) precision farming. Each of these areas offers application in agricultural environmental studies.

Students interested in plant, soil and agricultural sciences at the doctoral level can be admitted to a program of study leading to the Ph.D. degree in agricultural sciences, plant biology or through the Environmental Resources and Policy Ph.D. program. The program, which is administered by the Graduate School through the College of Agricultural Sciences, the Department of Plant Biology, or the Colleges of Agricultural Sciences, Liberal Arts, and Science (Environmental Resources and Policy) is adequately flexible to allow students to explore such interests as plant physiology, plant nutrition, chemical control of plant growth, plant genetics, etc.

Admission

Application for admission to graduate study should be directed to the department. The applicant must have the registrar of each college previously attended send an official transcript directly to the department. In addition applicants should send a letter directly to the Graduate Coordinator of the Department of Plant, Soil and Agricultural Systems expressing their professional and personal career objectives. Applicants should also request that four persons who can evaluate the student's academic ability write letters directly to the Graduate Coordinator in their behalf. Final admission to the program and a particular concentration administered by the Department of Plant, Soil and Agricultural Systems is made by the department. Minimal admission requirements to the program are: a) completion of the plant, soil and agricultural systems or agricultural systems undergraduate requirements and b) a minimal grade point average of 2.7 ($A = 4.0$). The students who do not meet the requirement of completing the required courses in the undergraduate program in plant, soil and agricultural systems or

agricultural systems may apply to enroll as nondeclared students to make up these deficiencies. Undergraduate course work taken to correct these deficiencies will not apply to the minimum requirements for the master's degree. Students entering the Plant, Soil and Agricultural Systems graduate program with a GPA below 2.70 are accepted on a conditional basis and must enroll in 12 hours of structured courses at the 400–500 level and make a GPA of 3.0 or be suspended from the program.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Plant, Soil and Agricultural Systems. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Program Requirements

If the student submits a thesis, minimum coursework requirements for the master's degree may be fulfilled by satisfactory completion of 30 semester hours of graduate credit. At least 20 hours of that credit must be from structured courses. At the 500 level 15 hours of course credit are required, of which no more than 10 hours may be from unstructured courses. Graduate seminar is required but is not a structured course. Overall, at least 15 semester hours must be from departmental courses.

If the student submits a research paper (non-thesis option) minimum coursework requirements for the master's degree may be fulfilled by satisfactory completion of 40 semester hours of graduate credit. At least 30 hours of that credit must be from structured courses. At the 500 level 18 hours of course credit are required, of which no more than 10 hours may be from unstructured courses. Graduate seminar is required but is not a structured course. Overall, at least 25 semester hours must be from departmental courses.

Students who wish to teach in agriculture education must complete a minimum of 15 hours in agriculture (including agricultural education), six hours of research methods or statistics, and six hours in education or community development. M.S. students usually take 4-6 hours of research or thesis, and complete the additional hours by taking courses in education or agriculture.

Each student, whether in the thesis or non-thesis option, will be assigned a mutually agreed upon major professor to direct the program. The major professor will serve as chair of the student's advisory committee which will consist of at least two members from within the department and may include one member from another department or program. Each master's degree candidate must pass a comprehensive oral examination covering graduate work including the thesis or research paper.

Courses (PSAS)

Field trips are required for certain courses.

400-2 Trends in Agronomy. (Same as Plant and Soil Science 400.) A discussion session format will be employed as a means of acquainting students with recent literature and allowing them to remain current with latest developments in their area of specialty. Prerequisite: restricted to departmental approval.

401-2 Agricultural Plant Pathology. A study of macro and micro-organisms and environmental factors that cause disease in plants of agricultural importance; of the mechanisms by which these factors induce disease in plants; and of the methods for managing diseases and reduce the damage they cause. Prerequisite: restricted to departmental approval.

402-1 to 12 (1 to 6 per topic) Problems in Agricultural Education and Technology. (Same as Agricultural Systems 402.) (a) Agriculture education, (b) agriculture technologies. Designed to improve the techniques of agricultural education and mechanization workers through discussion, assignment and special workshops on problems related to their field. Emphasis will be placed on new innovative and currently developed techniques for the field. A limit of six hours will be counted toward graduation in Master's degree program. Prerequisite: restricted to departmental approval.

403A-2 Field Crop Diseases. A survey of major diseases of important field crops in the United States. Disease identification, cycles, and management strategies will be addressed. Prerequisite: restricted to departmental approval.

403B-2 Horticultural Crop Diseases. A survey of major diseases of important horticultural crops in the United States. Disease identification, cycles, and management strategies will be addressed. Prerequisite: restricted to departmental approval.

403C-1 Turfgrass Diseases. A survey of major diseases of important turfgrasses in the United States. Disease identification, cycles, and management strategies will be addressed. Prerequisite: restricted to departmental approval.

403D-1 Tree Diseases. A survey of major diseases of important tree species in the United States. Disease identification, cycles, and management strategies will be addressed. Prerequisite: restricted to departmental approval.

405-3 Plant Breeding. (Same as Plant and Soil Science 405.) Principles of plant breeding emphasized together with their application to the practical breeding of agronomic, horticultural and forest plants. Field trip costs approximately \$10. Prerequisite: restricted to departmental approval.

408-3 World Crop Production Problems. (Same as Plant and Soil Science 408.) Ecological and physiological factors

influencing production in various areas of the world. Natural limitations on world crop production. Non-agricultural factors influence world crop output. Prerequisite: 200.

409-3 Crop Physiology. (Same as Plant and Soil Science 409.) Principles of basic plant physiology. Topics include cell structure, photosynthesis, respiration, water and mineral relations, vascular transport, and plant growth regulators. Course fee: \$50. Prerequisite: restricted to departmental approval.

411-3 Human Resource Development Programs in Agriculture. (Same as Agricultural Systems 411.) Principles and procedures of human resource development (HRD) programs in agriculture with emphasis on program determination and methods. Prerequisite: restricted to departmental approval.

412-3 Methods of Agriculture Mechanization. (Same as Agricultural Systems 412.) Theory and use of educational materials and devices adaptable to the needs and interests of educators involved in agricultural mechanization laboratories. There is a \$15 laboratory fee for this course.

414-3 Adult Education Procedures, Methods and Techniques. (Same as Agricultural Systems 414.) Determining adult education needs and interests of the community. Securing and organizing the information needed for adult education programs and planning teaching activities.

415-3 Beginning Teacher Seminar. (Same as Agricultural Systems 415.) The application in the professional field setting, of principles and philosophies of the education system. Includes application of principles of curricula construction, programming student and community needs. Prerequisite: restricted to departmental approval.

418-3 Applications of Integrated Software/Agriculture. (Same as Workforce Education and Development 409.) (Same as Agricultural Systems 418.) Design of agricultural or educational applications of integrated software. Spreadsheet, database, word-processing, graphic and communications software will be applied to the solution of agricultural problems. Individual student projects will be the focus of the applied nature of the class. Prerequisite: restricted to departmental approval.

419-3 Plant Molecular Biology. (Same as Plant Biology 419.) A survey of molecular phenomena unique to plant systems. Topics will include: genome organization and synteny between plant genomes, transcriptional and post-transcriptional control of gene expression, signal transduction, epigenetics, plant-pathogen interactions and responses to biotic and abiotic stresses. Prerequisite: restricted to departmental approval.

420-4 Crop Pest Control. (Same as Plant and Soil Science 420.) Study of field pests of forest; orchard, field and garden crops; pest control principles and methods; control strategy; and consequences of pest control

operations. Lab fee: \$35.00 Prerequisite: restricted to departmental approval.

421-3 Turf Management Issues and Strategies. (Same as Plant and Soil Science 421) Issues in environmental, technical, management, social, political, business, and sports arenas that interact with turf management. Students will utilize periodicals and other references for preparing papers addressing these issues. Laboratory fee: \$25. Prerequisite: restricted to departmental approval.

422-3 Turf Science and Professional Management. (Same as Plant and Soil Science 422.) Basic concepts of physiology, growth, and nutrition of turfgrasses and their culture. Application of turfgrass science to management of special turf areas such as golf course, athletic fields, and sod farms; and to the turfgrass industry. A fee of \$50 is assessed to pay for guest speaker expenses, laboratory materials, and field trips. Prerequisite: restricted to departmental approval.

423-3 Greenhouse Management. (Same as Plant and Soil Science 423.) Principles of greenhouse management controlling environmental factors influencing plant growth; greenhouses and related structures; and greenhouse heating and cooling systems. Laboratory fee: \$40. Prerequisite: 220 or consent of instructor.

424-4 Floriculture. (Same as Plant and Soil Science 424.) Production, timing and marketing of the major floricultural crops grown in the commercial greenhouse. Each student will have an assigned project. Laboratory fee: \$40. Prerequisite: restricted to departmental approval.

425-5 Mineral Nutrition and Membrane Physiology (Same as Plant Biology 425; Same as Plant and Soil Science 425). A study of plant mineral nutrition from both the plant and soil perspective and a discussion of membrane transport and water relations phenomena that influence nutrient and ion homeostasis in plants. A \$35 laboratory fee will be assessed. Prerequisites: PLB 320 or PLSS 409.

426-4 Genomic and Bioinformatics. (Same as Plant and Soil Science 426.) The course is designed to introduce students from a variety of backgrounds and departments to the scope and methodology of genomic and bioinformatic sciences. Real problems and solutions from genome data analysis are studied in this course to see how high throughput genomics is driving bioinformatics, and changing the biological sciences in revolutionary ways. Prerequisite: restricted to departmental approval.

427-5 Plant Biochemistry. (Same as Plant Biology 427 and Plant and Soil Science 427.) Exploration of fundamental biochemical pathways in plants with an emphasis upon carbon and nitrogen metabolism. Lab fee: \$35. Prerequisite: restricted to departmental approval.

428-3 Advanced Landscape Design 1. (Same as Plant and Soil Science 428.) Development of the design process, graphics and verbal communication of landscape projects. Emphasis on large-scale projects and residential design.

Laboratory fee: \$25. Prerequisite: restricted to departmental approval.

429-3 Advanced Landscape Design II. (Same as Plant and Soil Science 429.) Development of the design process, graphics and verbal communication of landscape projects. Emphasis on construction details, color rendering and portfolio development. Laboratory fee: \$25. Prerequisite: restricted to departmental approval.

430-4 Plant Propagation. (Same as Plant and Soil Science 430.) Fundamental principles of asexual and sexual propagation of horticultural plants. Actual work with seeds, cuttings, grafts and other methods of propagation. Field trip costs approximately: \$5. Lab fee: \$40. Prerequisite: 220.

431-4 Landscape Construction. (Same as Plant and Soil Science 431.) An introduction course in the basic elements of landscape construction dealing with wood, concrete, masonry and stone. Emphasis will be placed on safety, construction interpretation of construction drawings, specifications for specific structures, materials selection, cost estimation, site preparation, and construction techniques. Laboratory fee: \$170. Prerequisite: 220.

432-4 Garden Center and Nursery Management. (Same as Plant and Soil Science 432.) Principles and practices in both field and container production or ornamental landscape materials and the marketing of landscape plant materials at the nursery and retail garden center. Business management of both nurseries and garden centers will be included. Laboratory fee: \$50. Prerequisite: restricted to departmental approval.

433-4 Introduction to Agricultural Biotechnology. (Same as Animal Science 433.) (Same as Plant and Soil Science 433.) This course will cover the basic principles of plant and animal biotechnology using current examples; gene mapping in breeding, transgenic approaches to improve crop plants and transgenic approaches to improve animals will be considered. Technology transfer from laboratory to marketplace will be considered. An understanding of gene mapping, cloning, transfer and expression will be derived. Prerequisite: restricted to departmental approval.

434-3 Woody Plant Maintenance. (Same as Plant and Soil Science 434.) Care and management of ornamental shrubs and trees commonly used in the landscape. Topics to include trimming, pruning, fertilization, transplanting and diagnosis of woody plant problems. Prerequisite: restricted to departmental approval.

435-1 to 4 Agricultural Molecular Biotechnology Seminar. (Same as Plant and Soil Science 435.) Molecular Biology is rapidly making important contributions to agricultural science through biotechnology. An appreciation of the techniques of molecular biology and their application to plant improvement is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be discussed.

Presentations on particular research problems will be made. Graded S/U only.

436-4 Successful Fruit Growing. (Same as Plant and Soil Science 436.) Learn how to grow and use temperate fruit trees for your pleasure and/or economic benefit. Learn to use the basic principles of plant-environment interaction to understand and solve common problems found in the culture of tree fruit crops in the landscape, garden or orchard. Master the secrets of fruit growing through emphasis on hands-on experiential laboratories. Focus on Midwest culture of tree fruit and nut crops. One-day field trip. Required textbooks mandatory. Laboratory fee: \$135. Prerequisite: restricted to departmental approval.

437-4 Vegetable Production. (Same as Plant and Soil Science 437.) Culture, harvesting, and marketing of vegetables; with morphological and physiological factors as they influence the crops. Laboratory fee: \$25. Prerequisite: restricted to departmental approval.

438-3 Techniques in Plant Molecular Biology. (Same as Plant and Soil Science 438) Student will gain hands-on experience with current molecular techniques being applied to questions in the plant sciences. These include isozyme electrophoresis, DNA and RNA extraction, restriction endonuclease digestions, Northern blotting, Southern blotting, PCR (polymerase chain reaction), gene cloning and DNA sequencing. Student will also gain some exposure to the use of computers in manipulating and analyzing molecular data. Prerequisite: restricted to departmental approval.

441-3 Soil Morphology and Classification. (Same as Plant and Soil Science 441.) Development, characteristics, and identification of soils, study of profiles; and interpretation and utilization of soil survey information in land use planning. Field trip costing approximately \$5. Prerequisite: restricted to departmental approval.

442-3 Soil Physics. (Same as Plant and Soil Science 442.) A study of the physical properties of soils with special emphasis on soil and water relationships, soil productivity and methods of physical analysis. Prerequisite: 240.

443-3 Soil Management. (Same as Plant and Soil Science 443.) The soil as a substrate for plant growth. Properties of the soil important in supplying the necessary mineral nutrients, water and oxygen and for providing an environment conducive to plant root system elaboration. Soil management techniques that are important in optimizing plant growth. Prerequisite: 240.

445-3 Irrigation Principles and Practices. (Same as Plant and Soil Science 445.) This course will cover basic principles of irrigation sciences; water requirements of crops; soil water relationship; water application methods including flooding, sprinkler and drip (or trickle) systems; water conveyance, distribution and measurement; evaluation of irrigation efficiency; and irrigation scheduling. Considerations will also include crop production effects and economic aspects of irrigation. Prerequisite: restricted to departmental approval.

446-3 Soil and Water Conservation. (Same as Plant and Soil Science 446.) Covers the principles of hydrologic processes and soil erosion. Consideration will be given to the occurrence of soil erosion as it affects humans, food production and the environment. The methods and technologies for protecting against and controlling of erosion will also be discussed. Prerequisite: restricted to departmental approval.

447-3 Fertilizers and Soil Fertility. (Same as Plant and Soil Science 447.) Recent trends in fertilizer use and the implications of soil fertility build up to sufficiency and/or toxicity levels; the behavior of fertilizer material in soils and factors important in ultimate plant uptake of the nutrients; the plant-essential elements in soils and ways of assessing their needs and additions; tailoring fertilizer for different uses and management systems; implication of excessive fertilization in our environment. Prerequisite: restricted to departmental approval.

448-2 Soil Fertility Evaluation. (Same as Plant and Soil Science 448.) A laboratory course designed to acquaint one with practical soil testing and plant analysis methods useful in evaluating soil fertility and plant needs. One hour lecture, two hours laboratory. Laboratory fee: \$15. Prerequisite: restricted to departmental approval.

454-4 Soil Microbiology. (Same as Microbiology 454.) (Same as Plant and Soil Science 454.) A study of microbial numbers, characteristics and biochemical activities of soil microorganisms with emphasis on the transformation of organic compounds, nitrogen phosphorus, sulfur, iron and other plant essential nutrients. Lab fee \$15. Prerequisite: 240 or Microbiology 301.

455-3 Biology of Plant-Microbe Interactions. The molecular basis of post-pathogen interactions and disease development in plants is examined with a critical review of original and current literature focusing on the mechanisms of pathogenesis, virulence, disease development and resistance, and response mechanisms in plants. Prerequisite: restricted to departmental approval.

461-3 Programming for Agricultural Systems. (Same as Agricultural Systems 461) Computer programming concepts and strategies are applied to agricultural problems and systems. Students will analyze problems, design solutions, develop software and test solutions. Student will be expected to develop a software project related to their academic interests. Lab fee: \$10. Prerequisite: restricted to departmental approval.

466-4 Vine and Small Fruit Culture. (Same as Plant and Soil Science 466.) Study of the developmental patterns and environmental responses of important vine and small fruit crops; strawberries, brambles, blueberries, grapes and exotic crops. Learn to adapt these crops to profitable culture for the amateur or professional with a Midwest focus. Practical hands-on experience in the classroom and the field. Two one-day field trips required. Required textbooks mandatory. Lab fee: \$150. Prerequisite: restricted to departmental approval.

468-3 Weeds - Their Control. (Same as Plant and Soil Science 468.) Losses due to weeds, weed identification and distribution, methods of weed dissemination and reproduction, mechanical, biological and chemical control of weeds. State and Federal legislation pertaining to weed control herbicides. Herbicide commercialization. Field Trips costing approximately \$5. Prerequisite: restricted to departmental approval.

470-2 Post Harvest Handling of Horticultural Commodities. (Same as Plant and Soil Science 470.) Fundamental principles of post harvest physiology, handling, and evaluation of horticultural commodities will be covered. Specific details will be given on vegetable, fruit, ornamental and floricultural commodities. Field trip costing approximately \$30. Prerequisite: 220 and Plant Biology 320.

472-3 Precision Agriculture. (Same as Agricultural Systems 472.) A study of the basic principles of the Global Positioning System and how that system, along with currently available and emerging technologies is applied to the intensive management of production agriculture resources. Prerequisite: restricted to departmental approval.

473-3 Agricultural Automation. (Agricultural Systems 363) This course introduces students to topics such as power distribution, programmable controllers, sensors and components, ladder control circuits and diagrams, and motor controls. The lab will address automation issues for different industrial processes such as pasteurization. Lab fee: \$20. Prerequisite: restricted to departmental approval.

475-4 Golf Course Green Installation and Maintenance. This course will mainly focus on the requirements, installation, care and maintenance of the rooting media of golf course putting green and turfgrass on disturbed soils. Prerequisite: Plant and Soil Science 240

476-3 Agricultural Safety and Health. (Same as Agricultural Systems 476.) Analysis of safety and health issues important to managers and supervisors in agricultural operations. Topics include agricultural accident data, causes and effects of accidents, hazard identification, strategies for accident prevention, response to accidents and health risks and safeguards. Development and documentation of accident and illness prevention activities in the workplace. Prerequisite: restricted to departmental approval.

480-3 Designing Outdoor Spaces. This course will instruct and challenge the student to design outdoor spaces that cultivate a sense of place as related to the site and the users. The course will review fundamental landscape planning process including principles and elements of design with an emphasis on "green" decision making. Prerequisites: restricted to departmental approval.

483-3 Agricultural Processing Systems. This course provides students with an understanding of the design principles, equipment, procedures and processes utilized in handling processing and storing agricultural products.

495-3 Food & Pharmaceutical Packaging. Applied packaging and food engineering principles used in packaging, storing, preserving, and transporting food and drug products. Topics include packaging functions, graphic design, printing, sterilization, and food safety. Utilization of paper, glass plastics, laminates and metals. Applications of machinery and equipment.

497-2 Agricultural Operations Management. Practical management skills and strategies are applied to the agriculture industry. This course is intended for students who desire to advance into management positions in the agricultural industry. Skills and strategies include: interpretation of financial reports, preparing and monitoring budgets, time and process management, critical thinking, advanced problem solving, professional development, strategy planning and communication, leadership, personnel interaction and team-building. Prerequisite: graduate standing or instructor consent.

499-3 Agriculture Information for Elementary Teachers. (Same as Agricultural Systems 499.) A general inquiry into the agriculture literacy appropriate for elementary students. A framework for evaluating content appropriate for elementary students in the pursuit of agriculture literacy will be developed.

500-3 Agricultural Systems Research Methodology. Research methodology for agricultural education and agricultural systems technology including defining research problems, preparing project proposals and sources of data. Prerequisite: restricted to departmental approval.

501-43 Recent Research in Agricultural Education. A study of recent research and development in agricultural education. The course includes an analysis of regional and national scholarly publications, procedures and products. Prerequisite: restricted to departmental approval.

518-3 Principles of Herbicide Action. Chemistry and mode of action of herbicides. Nature of herbicidal action. Illustrates the various types of chemical weed control procedures in current use. The physiology of herbicidal action examined using the different mechanisms established for various chemical groups of herbicides. Prerequisite: 468, Plant Biology 320.

520-3 Growth and Development of Plants. (Same as Plant Biology 520) Physiological control of developmental processes. Emphasis on exogenous growth-regulating compounds and their behavior in plants. Prerequisite: restricted to departmental approval.

524-2 Advanced Plant Genetics. (Same as Plant Biology 524.) Prerequisite: restricted to departmental approval.

525-3 Program Development in Agricultural Education. Analysis and appraisal of current trends in agricultural education program development. Attention is given to implications for educators at the high school, post secondary and in extension education positions. Offered each year, alternating spring and summer semesters.

526-4 Cytogenetics. (Same as Plant Biology 526.) Prerequisite: restricted to departmental approval.

527-3 Professional Development in Agricultural Education. Recent developments and trends in agricultural education are presented for review and discussion. The role of the agricultural instructor in determining educational priorities is emphasized. Offered each year, alternating fall and summer semesters.

530-3 Plant Ecophysiology. (Same as Plant Biology 530) A study of the physiological processes that influence the growth reproduction, adaptation, and geographic distribution of plants. The ecophysiology of plant stress and interactions. Prerequisite: restricted to departmental approval.

531-3 International Agricultural Systems. (Same as Agricultural Systems 431) Introduction to world agriculture, farming systems, world crops, agricultural trade, and food production and processing. Influence of population and climate. Ethical issues surrounding rain forests, global agriculture, finance, world trade, crops and livestock, and the environment. Appropriate technologies and their social and economic impact on developing countries. Prerequisite: restricted to departmental approval.

547-2 Soil and Environmental Quality. A study of the interaction between plants and soil-water, and their effects on soil and water pollution. Reactions and processes governing the solubility and mobility of metals, organic compounds and nutrients in soil, sustainable management practices, and soil/water resource remediation improving environmental quality will be discussed.

551-4 Plant Nematology. This course will provide an understanding of plant parasitic nematode anatomy and morphology, identification, life cycles, and management strategies. Emphasis will be placed on practical or applied aspects of information presented. Prerequisite: restricted to departmental approval.

560-5 (3,2) Field Plot Technique. (a) Design of field plot and greenhouse experiments including appropriate statistical analyses for each of the designs. Data interpretation. Prerequisite: EPSY 506, or ZOOL 557, or consent of instructor. (b) Each of the designs discussed in (a) will be illustrated with a type problem and solved by computer processes using primarily MINITAB and SAS software programs. Prerequisite: PSAS560a, or concurrent enrollment or consent of instructor.

571-4 Genomics of Eukaryotes. (Same as Plant Biology 571.) Genomics, Proteomics and Bioinformatics are rapidly making important contributions to the Life Science through biotechnology. An appreciation of the genomic tools is important to all in agriculture and biology. The relationships between plant molecular biology and the biotechnology industry will be explored. Short independent practical projects in genomics, proteomics or bioinformatics will be pursued. Prerequisite: restricted to departmental approval.

572-3 Current Research in Agricultural Systems. A study and analysis of current problems, research findings and innovations in agricultural systems. Technical reports and journal articles will be discussed and analyzed.

Students will select articles related to their own research interests and begin writing a thesis or research proposal. Prerequisite: restricted to departmental approval.

575-3 Introduction to Agricultural Systems. Agricultural systems are studied from a manager's perspective as a specified group of components, operational functions and processes that are integrated to accomplish a designated, well-defined purpose. Topics include planning, evaluating, and adjusting systems using strategies to maximize productivity with consideration for: reliability, manpower, scheduling, economy, packaging, human and animal factors and decision systems. Agricultural systems are studied in the context of a field production, manufacturing and processing, technical sales and marketing and technical communications. Laboratory fee \$10.

580-9 (1-9) Colloquium Intro Bioinformatics for Computer Engineers. Bioinformatics makes important contributions to the Life Sciences through biotechnology. The use of Bioinformatics is important to all in agriculture, biology, computer engineering and computer science involved in the analysis of genes; proteins; and genomes by computers and networks. Short independent practical projects in bioinformatics or computer networking may be pursued. Prerequisite: Graduate student status.

581-1 to 4 (1,1,1,1) Seminar. Individual presentations on subjects and problems relating to soils, field and horticultural crops, education, information, and technologies and other phases of plant, soil and general agriculture. Graded S/U only.

582-6 (2,2,2) Colloquium in Plant and Soil Science. Recent developments and trends in specialized areas of plant and soil science will be discussed in (a) Genetics and plant breeding, (b) Research methods, (c) Physiology and ecology.

588-1 to 8 International Graduate Studies. Residential graduate study programs abroad. Approval of department required both for the nature of program and number of hours of credit. Prerequisite: restricted to departmental approval. Graded S/U only.

590-1 to 4 Readings. Contemporary books and periodicals on selected subjects within the fields of plant, soil and agricultural systems. Prerequisite: restricted to departmental approval.

592-1 to 3 Special Problems. Directed study of specialized areas of crop production, horticulture, soils or agricultural systems depending on the program of the student. Discussion, seminars, readings and instruction in research techniques. Prerequisite: restricted to departmental approval.

593-1 to 6 Individual Research. Directed research on approved projects investigating selected fields of plant, soil and agricultural systems. Prerequisite: restricted to departmental approval.

595-1 to 4 Agricultural Occupation Internship. Prepares coordinators to fulfill their responsibilities in selected areas in agricultural related occupations through an internship in

the area of specialization and through orientation to related technical information. Prerequisite: restricted to departmental approval.

599-1 to 6 Thesis. At least three hours of thesis credit is required for the Master's degree under the thesis option. Prerequisite: restricted to departmental approval.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

POLITICAL SCIENCE

<http://www.politicalscience.siu.edu>
 weber@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Baker, John H., Associate Professor, *Emeritus*, Ph.D., Princeton University, 1961; 1966.

Bloom, Stephen, Assistant Professor, Ph.D., University of California, 2004; 2006. Comparative politics, international relations, nationalism, ethnic politics, political economy, Ukraine and Latvia.

Burnside, Randolph, Assistant Professor, Ph.D., University of New Orleans, 2004; 2005. American political institutions, public opinion, urban and minority politics.

Clinton, Robert L., Professor, Ph.D., University of Texas, 1985; 1985. Public law, political theory, public choice theory.

Comparato, Scott, Associate Professor, Ph.D., Washington University, 2000; 2000. Public law, judicial process, civil liberties, American politics.

Dale, Richard, Associate Professor, *Emeritus*, Ph.D., Princeton University, 1962; 1966.

Desai, Uday, Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1973; 1978.

Foster, John L., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1971; 1975. Organizational behavior and theory, urban government, program evaluation, public policy.

Garner, William R., Associate Professor, *Emeritus*, Ph.D., Tulane University, 1963; 1966.

Grant, J. Tobin, Associate Professor, Ph.D., The Ohio State University, 2001; 2001. American politics, political behavior, legislative politics, electoral politics, and religion & politics.

Habel, Phil, Assistant Professor, Ph.D., University of Illinois, 2006; 2006. American politics, media and politics, political psychology.

Hamman, John, Associate Professor, Ph.D., University of Illinois, 1988; 1989. Public administration, public policy, American government and politics.

Hatcher, Laura, Assistant Professor, Ph.D., University of Massachusetts, 2002; 2006. Public law, law and society, the legal profession, conservative legal movements, regulation and administrative law, qualitative research methods.

Hildreth, Roudy, Assistant Professor, Ph.D., University of Minnesota, 2005; 2005. Democratic theory, American political thought, political theory of John Dewey, youth civic engagement.

Jackson, John S., III, Professor, *Emeritus*, Ph.D., Vanderbilt University, 1971; 1969.

Kamarasy, Egon K., Assistant Professor, *Emeritus*, Doctor Politics, Budapest University, Hungary, 1942; 1959.

Kenney, David T., Professor, *Emeritus* Ph.D., University of Illinois, 1952; 1951.

Mason, Ronald M., Associate Professor, *Emeritus*, Ph.D., University of Iowa, 1976; 1976.

McClurg, Scott D., Associate Professor, Ph.D., Washington University, 2000; 2001. Political participation, public opinion, electoral behavior, political geography, spatial statistics, and campaign dynamics.

Melone, Albert, Professor, *Emeritus*, Ph.D., University of Iowa, 1972; 1979.

Miller, Roy E., Associate Professor, *Emeritus*, Ph.D., University of Illinois, 1971; 1967.

Mulligan, Ken, Assistant Professor, Ph.D., Ohio State University, 2004; 2006. American politics, mass political behavior, political psychology, voting behavior, religion and politics.

Shulman, Stephen, Assistant Professor, Ph.D., University of Michigan, 1996; 1997. International relations, international security, ethnicity and nationalism, post-soviet politics.

Snively, Keith, Professor, Ph.D., University of California at Davis, 1984; 1984. Public administration; personnel management; state, local, and urban government.

Solt, Frederick, Assistant Professor, Ph.D., University of North Carolina at Chapel Hill, 2003; 2005. Comparative politics, democratization, institutions, Latin America.

Somit, Albert, Distinguished Service Professor, *Emeritus*, Ph.D., University of Chicago, 1947; 1980.

Stewart, LaShonda M., Assistant Professor, Ph.D., Mississippi State University, 2008; 2008. Budgeting, Finance, Fund Balances, Local Governments.

Velazquez, Adrian M., Assistant Professor, Ph.D., University of Texas at Dallas, 2007; 2008. Policy Analysis and Implementation, Leadership and Managerial Decision-Making, Human Resources, Organizational Behavior and Methodology.

Young, Joseph, Assistant Professor, Ph.D., Florida State University, 2008; 2009. Terrorism, Interstate Conflict, Human Rights, Civil War & Insurgency, Neoliberal Reform in Latin America.

The Department of Political Science endeavors to accommodate the special and general interests of students through a broad curriculum, individualized programs, and varied teaching and research assistantships. The department takes a personal interest in its students throughout their period of enrollment and assists them in finding satisfying professional employment upon graduation. Graduates now hold academic appointments in 60 American universities and colleges and more than a dozen foreign institutions of higher education. Graduates are also employed in various governmental agencies at the national, state, and local level.

The professional interests of the faculty range across all fields of political science, and have resulted in significant scholarly publications and presentations at professional meetings.

Graduate programs in the Department of Political Science may be designed to lead to Master of Arts and Doctor of Philosophy degrees with a major in political science, and a Master of Public Administration degree. Graduate work in political science may be taken to satisfy requirements for a teaching specialty for the Master of Science in Education degree with a major in either secondary education or higher education. Graduate work in political science may also serve as a cognate field for a student majoring in another discipline.

Provisions of this publication are supplemented by policies made explicit in the regulations and procedures of the graduate studies program of the Department of Political Science and made available to all graduate students.

Application Procedures

Application for admission to graduate study in political science should be sent to the Department of Political Science. These materials consist of all post-secondary education transcripts, three letters of recommendation from persons who can evaluate the applicant's academic ability and a statement of purpose. Applicants for the M.A. and Ph.D. programs must also submit scores on the Graduate Record Examination (GRE) verbal and quantitative tests, and an example of written work that demonstrates the applicant's analytical and writing skills. Foreign students must have taken the test of English as a foreign language (TOEFL) and are expected to have a score of at least 600 (paper score) or 250 (computer score). Application material, including instructions for applying for financial assistance, for the Ph.D. and M.A. programs may be obtained from the Director of Graduate Studies, Department of Political Science. The Ph.D. and M.A. programs will admit students only for the fall semester. The M.P.A. program admits students for the fall or spring semesters. Application material for the M.P.A. program may be obtained from the M.P.A. program office. Applications and supporting materials for the Ph.D. program that are submitted by January 15 will be given full consideration for admission and funding. Exceptional

applications, however, will be considered until March 15. Applications and supporting materials for the M.A. program must be submitted by March 15. Applicants should contact the M.P.A. program office for the deadlines pertaining to the application term.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Political Science.

Master of Arts Degree Requirements

Admission. Applicants for the Master of Arts degree program are admitted only with the approval of the graduate studies committee of the department. The department imposes requirements for admission in addition to those of the Graduate School. The department will ordinarily accept as candidates for the Master of Arts degree only those applicants who (1) have graduated from an accredited four year college or university; (2) have completed four or more courses in social science, humanities, or related disciplines; (3) have a 2.7 (4-point scale) overall grade point average or, alternatively, have a 2.9 overall grade point average for the last two years of undergraduate work; and (4) have a 3.0 average in government or political science.

Retention. Retention is governed by the rules of the Graduate School. Students should avoid the accumulation of incomplete grades. No student with more than two incomplete grades can be awarded a graduate assistant appointment, and a student holding a graduate assistant appointment is subject to having the appointment terminated upon acquiring two or more incomplete grades.

Course Work. The director of graduate studies serves as adviser to each M.A. student until an advisory committee has been selected by the student with the approval of the director, normally no later than the middle of the student's first semester in residence. The advisory committee must approve the student's program. The student must earn a minimum of 30 semester hours of acceptable graduate credit to qualify for the Master of Arts degree. A maximum of 12 hours can be earned in 400-level courses. A minimum of six semester hours must be completed in each of three of the following fields: political theory; methodology; American government and politics; public law; public administration and policy analysis; comparative government and politics; international relations; a cognate or interdisciplinary field. M.A. candidates must complete pro-seminars in at least two of the three areas of emphasis offered by the student for examination except in cases of cognate fields that do not stipulate pro-seminar requirements. The selection of areas of emphasis must be approved by the student's advisory committee.

The student who completes the minimum of 30 semester hours of course work may devote no more than six of those hours to courses taken outside of the department unless the work is in an approved cognate area. In the latter case,

a maximum of 12 hours in the cognate area may be counted toward the fulfillment of area and degree requirements.

Each candidate for the Master of Arts degree must complete POLS 500A and POLS 500B. A student may count a maximum of 6 semester hours of 400- or 500-level tool course work toward partial completion of degree requirements, provided that (1) no more than six semester hours of an approved cognate area are counted as part of the 30 semester hours and (2) the tool courses are not counted as fulfilling one of the area requirements.

Thesis. In addition to the required course work, the student must submit a thesis. A student may receive a maximum of six hours credit for the thesis. Before registering for thesis credit, the student must have an overall GPA in M.A. work of at least 3.0 ($A = 4.0$) and must have selected a thesis committee approved by the director of graduate studies. The membership of the thesis committee will normally be different from that of the advisory committee. A prospectus outlining the research proposed for the thesis must be approved by the members of the thesis committee and filed with the director of graduate studies.

A final oral examination conducted by the appropriate committee and open to the public will cover the thesis and the student's general competence in political science. A student may not take the examination if there are any incomplete grades on record except by petition to the graduate studies committee. If the student fails the examination or if the thesis is rejected, the student may be dropped from the department's degree program or may submit a new or revised thesis or repeat the examination at the discretion of the examining committee.

Copies of the thesis should be submitted to the student's thesis committee members no later than one week before the scheduled final oral examination. A copy of the approved thesis must be filed with the director of graduate studies.

Exceptions. An exception from these rules must be justified in a petition approved and signed by the student's committee members, submitted to the director of graduate studies and approved by the members of the graduate studies committee at a scheduled meeting.

Master of Public Administration Degree Requirements mpaprog@siu.edu

Admission. Students are admitted to either pre-service or in-service status. To be admitted as an in-service student, the student must have significant professional experience in a public or quasi-public agency. Significant professional experience can generally be defined as: at least one year of administrative full-time work experience. Students having less than one year of significant professional experience are admitted to pre-service status.

Applications for admission should be directed to the Director, Master of Public Administration Program,

Department of Political Science. To be considered for admission, applicants must have: (1) graduated from an accredited four-year college or university and (2) received an overall grade point average of 2.7 (4.0 scale) or, alternatively, a 2.9 overall grade point average for the last two years of undergraduate work. The MPA program seeks applicants with a minimum of a 3.0 undergraduate GPA. In instances where a candidate's promise is indicated by professional experience rather than undergraduate record, consideration will be given on an individual basis to admission or conditional admission. Retention is governed by the standards of the Graduate School. Also, students receiving two C grades in required courses will be dismissed from the program.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Political Science. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

A GRE score is required of all applicants wishing to be considered for a graduate assistantship or fellowship.

Degree Requirements. M.P.A. students complete a 43 semester hour program of study, as follows: (1) seven required courses, totaling 19 semester hours, (2) 15 semester hours of elective course work, (3) a research paper in public administration for which three semester hours are awarded, (4) an oral examination, and (5) an internship, for which six semester hours are earned. Of the 34 hours of graduate level course work, at least 21 semester hours must be taken in the Department of Political Science. Each of these requirements is described more fully below. In-service students receive an internship waiver reducing the total number of semester hours needed to graduate to 37.

Retention. All MPA students are required to maintain a minimum level of academic performance. Any student earning a "C" grade or below in more than one of the MPA required courses will be dismissed from the program. MPA students otherwise must conform to the standards set out in the MPA Student Handbook. Issues not addressed by the Handbook fall under retention policy provisions in Graduate School Catalog.

Prerequisites. Students lacking undergraduate preparation in public administration must complete POLS 340 during their first semester of study. Exceptions to this may be granted to in-service students, on a case-by-case basis. POLS 503b is a prerequisite to enrollment in POLS 544 and is recommended prior to enrollment in either POLS 542 or POLS 557. POLS 540 can be taken only after at least three other core courses have been completed.

Required Coursework. The following seven courses are required.

POLS 503b-3	Data Preparation and Management
POLS 540-3	Seminar in Public Management
POLS 542-3	Public Budgeting and Fiscal Management
POLS 543-3	Human Resource Management
POLS 544-3	Program Analysis and Evaluation
POLS 545-3	Organization Theory and Behavior
POLS 594-1	Preprofessional Seminar in Public Administration
POLS 596-3	Research Paper in Public Affairs
POLS 595-6	Internship in Public Affairs

To facilitate the work of employed students, each of the required courses is offered in the evening at least once every three years. A substitution for one core course may be allowed if the substituted course is similar in content to the particular core course or if competence in the subject matter of the course is clearly evident.

M.P.A. students concentrating in aviation administration substitute POLS 557 (Public Financial Administration) for POLS 544 (Program Analysis and Evaluation).

Electives. Electives courses may be selected from the offerings of various departments across the University, as well as those of the Department of Political Science. The student and the faculty adviser consult in selecting courses best suited to the student's individual career goals. 400 level courses, of an introductory technical nature and other specialized courses especially relevant to the public administration profession may be taken with the consent of the MPA Director. Students may count no more than 6 hours of 400 level credit toward fulfillment of the MPA degree requirement.

The Research Paper. All students must register for POLS 596 and complete a research paper. The research paper is to be an examination of some issue or problem in public administration. It may be either theoretical or applied, or some combination of theoretical and applied concerns. Early preparation for the research project and related paper begins during the student's first semester of study, and completion is normally a prerequisite for internship placement. The paper is written under the supervision of the student's faculty committee.

The Oral Examination. After completion of course work and the research paper, an oral examination is scheduled and conducted by the student's faculty committee. The examination gives attention to course work as well as the methodology and findings of the research paper. After satisfactory performance in the oral examination, a copy of the approved research paper must be filed with the Graduate School and program director. Students who fail the examination are allowed a second examination after remedial work as recommended by the committee. Candidates who fail more than once are dropped from the program.

The Internship. Pre-service students must register for POLS 595 and serve an internship in a governmental agency, nonprofit organization or quasi-governmental agency. The internship is usually for 4.5 months of full-time work or nine months of half-time work, and it provides a stipend as negotiated by representatives of the program and agency. The internship is normally scheduled to begin after all course work and the research report have been completed. In extraordinary circumstances, a pre-service student may substitute six semester hours of coursework for the internship if a request is approved by the MPA program.

MPA Aviation Administration Concentration

To be considered for admission, pre-service applicants will have graduated from an accredited four year college or university with a major in some aspect of aviation, and normally have either a grade point average of 2.7 (4.0 scale) or, alternatively, a 2.9 GPA for the last two undergraduate years. The MPA program seeks applicants with a minimum of a 3.0 undergraduate GPA. In-service applicants with strong professional experience may be admitted with grade point averages below these levels and with undergraduate majors outside the aviation field. Undergraduate course work and letters of recommendation will also be considered in admission decisions.

The required courses for aviation administration students are:

POLS 503B	Data Preparation and Management
POLS 540	Seminar in Public Management
POLS 542	Public Budgeting and Fiscal Management
POLS 543	Human Resource Management
POLS 545	Organization Theory and Behavior
POLS 557	Public Financial Administration
POLS 594	Preprofessional Seminar in Public Administration
POLS 551	Aviation Policy, Law and Regulation
POLS 552	Advanced Airport Administration
POLS 554	Aviation Planning
POLS 555	International Aviation

The research paper and internship requirements are the same for aviation administration students as for all other MPA students. Aviation students take three hours of elective coursework.

Concurrent Degrees in Law and Public Administration

Students who have been admitted separately to the Southern Illinois University School of Law and the Master of Public Administration program may study concurrently for the Juris Doctor and M.P.A. degrees. Students interested in concurrent study should inform both programs before entering the second academic year of either program and will register as law students with a minor in public administration. Each program will maintain records

and evaluate final degree requirements as if the student were enrolled in only one program.

Concurrent study students must complete a minimum of 81 semester hours of School of Law credits which meet all law area requirements, as well as all M.P.A. requirements to receive the J.D. degree. Students will not be permitted to take course work outside the prescribed law curriculum during the first year of law class work. Students may enroll for both law and graduate course work during subsequent years provided a minimum of 10 semester hours of law and 13 semester hours total are taken in any term which has law course enrollment.

Concurrent study students must complete a minimum of 37 semester hours of the usual 43 hour MPA distribution requirement in order to receive the master's degree. A maximum of six semester hours of Law credits of a public affairs nature (for example administrative law, environmental law, labor law, natural resources law) may be applied to both J.D. and M.P.A. requirements if approved by the director of the M.P.A. program. All concurrent study students will complete either the M.P.A. internship experience and project, or the applied study project. Internships will normally be scheduled during the third or fourth year of concurrent study.

Ph.D./J.D. in Political Science and Law

Students who have been admitted separately to the Southern Illinois University School of Law and doctoral program in political science may study concurrently for the Juris Doctor and Doctor of Philosophy degrees. Students interested in concurrent study should inform both programs before entering the fourth semester of law school. Each program will maintain records and evaluate final degree requirements as if the student were enrolled in only one program.

Concurrent study students must complete a minimum of 81 semester hours of School of Law credits which meet all law area requirements, as well as all Ph.D. area requirements, to receive the J.D. degree. Students will not be permitted to take course work outside the prescribed law curriculum during the first year of law class work. Students may enroll for both law and graduate course work during subsequent years provided a minimum of 10 semester hours of law and 12 semester hours total are taken in any term which has law course enrollment.

Concurrent study students must complete the entire first-year law curriculum with a law grade point average of 2.5 before being eligible to register for any political science graduate courses; and must complete a minimum of 60 semester hours which meet the distribution requirements of the Ph.D. program, as well as all law area requirements, to receive the Ph.D. degree. A maximum of 9 semester hours of School of Law credits of a political science nature (for example administrative law, environmental law, labor law, natural resources law) may be applied to both J.D. and Ph.D. requirements if approved by the director of the Ph.D.

program. All concurrent study students will complete a doctoral dissertation.

Doctor of Philosophy Degree Requirements

Admission. Applicants for the doctoral degree are admitted only with the approval of the Graduate Studies Committee of the department. Students are expected to have sufficient background in political science, but an M.A. is not a prerequisite for admission for the PhD program. If admitted, the student will proceed toward the Ph.D. degree in accordance with the established rules of the department and Graduate School.

Retention. Retention is governed by the rules of the Graduate School. Students are expected to make reasonable progress toward a degree. Failure to make progress toward the degree will result in a student's removal from the Ph.D. program.

Program of Study. The work of a Ph.D. student is directed toward admission to candidacy for the doctorate, for which the student must meet the residency requirement, meet course, methods and research tool requirements, maintain a GPA of at least 3.5, and pass a preliminary examination. A student must take a minimum of 30 hours of coursework exclusive of tool and methods requirements and pass the written and oral examinations.

The student's coursework must be approved by the student's advisory committee and the Graduate Studies Committee. The advisory committee is selected by the student. The advisory committee is composed of a chair, who is qualified to chair a dissertation in the department, and two other members of the department faculty. The members of the advisory committee must represent the student's research and dissertation interests. The student's coursework is expected to be approved during the student's second semester in the program. The Director of Graduate Studies will determine the deadline and procedures for approval of a student's coursework.

The student must complete all course requirements determined by the student's advisory committee. This may include requirements such as pro-seminars in the student's exam fields, additional methods courses, or language study. A student must take at least two pro-seminars. Not more than nine hours of readings or individual research (POLS 590, 591, 592) may be counted toward the student's program of study. Not more than one 400-level course may be included as part of the student's program of study. Not more than nine hours of coursework outside of the department may count toward the minimum requirement.

Before enrolling in POLS 592 or POLS 591, the student is expected to have completed the appropriate pro-seminar for the area in which readings or individual research is to be done.

Research Tools and Methods. The Ph.D. is a research degree, and students must acquire knowledge of research

tools and methods. The minimum methodology requirement for Ph.D. students is POLS 500A, POLS 500B, POLS 500C, and POLS 501. The advisory committee may require additional course work in methods and/or tools (e.g. statistics, foreign language) as appropriate for student's research.

Accelerated Entry into the Ph.D. Degree Program. A student enrolled in the M.A. degree program may petition the graduate studies committee after two semesters in residence for waiver of the requirement of an M.A. degree as prerequisite for admission to the doctoral program, and for direct entry to the Ph.D. degree program in accordance with the following conditions. First, the student must be certified by the advisory committee to be an outstanding graduate student. In so doing, the committee must consider a wide range of supporting evidence including but not restricted to GPA, GRE, M.A. degree tool requirement, and evaluative letters from all graduate instructors from whom the student has taken courses. Second, the student must present 1 graduate research paper of outstanding quality or a published article of appropriate character and quality. The petition accompanied by the advisory committee recommendation and the supporting evidence must be presented to the graduate studies committee which will make the final decision on the petition. If admitted, the student will proceed toward the Ph.D. degree in accordance with the established rules of the department and Graduate School.

Direct Entry into the Ph.D. Degree Program. Students admitted under the direct entry option are required to fulfill M.A. degree method, tool, and course work requirements as part of the Ph.D. degree work. Additional measures of progress may be required by the student's advisory committee.

Program of Study. The work of a Ph.D. student is directed toward admission to candidacy for the doctorate, for which the student must meet the residency requirement, meet course, methods, and research tool requirements, maintain a GPA of at least 3.5, and pass preliminary examinations in three fields.

The student must be in residence for at least 1 year (2 semesters in each of which the student completes at least nine hours or six hours if the student holds a graduate assistantship) after admission to the Ph.D. program before preliminary examinations can be taken. Residence shall be counted from the time the student passes the final examinations for the master's degree or, in cases of accelerated entry or direct post-baccalaureate entry to the Ph.D. degree program, when the student has met all graduate school and departmental requirements pertaining to those options.

The student's program must be approved by an advisory committee selected by the student and approved by the director of graduate studies. The members of the advisory committee should represent the student's fields.

Students prepare in three fields. They take a minimum of 12 hours in two primary fields and nine hours in a supporting field. Students must take a minimum of 33 hours of coursework exclusive of tool and methods requirements and pass written and oral examinations in all of their chosen fields. They also must take the appropriate pro-seminar in each of their fields; not more than six hours of readings or individual research (POLS 590, 591, 592) may be counted toward the minimum coursework requirement in each field. The fields are: political theory; methodology; American government and politics; public law; public administration and policy analysis; international relations; comparative politics; a cognate or interdisciplinary field.

The student must also complete the research tools and methods requirement (see below) and any additional tools and/or methods course work required by the student's advisory committee. The student's advisory committee may require additional course work, in or out of the areas of examination. The student, before enrolling in POLS 590, Readings or POLS 591, Individual Research, are ordinarily expected to have completed the appropriate pro-seminar for the area in which readings or individual research is to be done. At least half of all course work must be in 500-level courses.

Research Tools and Methods. The Ph.D. is a research degree, and students must acquire knowledge of research tools and methods. POLS 500A, POLS 500B, and POLS 500C constitute the department's general methodology course. The minimum methodology requirement for M.A. students is POLS 500A and POLS 500B; for Ph.D. students the minimum is POLS 500A, 500B, and 500C (or their equivalents, as determined by the Director of Graduate Studies in consultation with the methodology faculty and Graduate Studies Committee). Students' Advisory Committees may require additional course work in methods and/or tools (e.g. statistics, foreign language) as appropriate to their substantive coursework, theses, and dissertations. Ph.D. students who wish to offer methods as an examination field must complete two additional methods courses chosen in consultation with the student's advisory committee and approved by the Graduate Studies Committee.

Preliminary Examinations. Before preliminary examinations can be scheduled a student must have completed all course work, have a grade point average of at least 3.5, and have had a preliminary examination committee approved by the director of graduate studies. Students may not take preliminary examinations if there are any incomplete grades on their records except by petition to the graduate studies committee.

The written preliminary examinations are to be completed within a period of ten days or two periods of ten days each in successive semesters; an oral examination follows within two weeks of the last written examination.

upon the approval of the examination committee. A student who passes the written and oral examinations is advanced to candidacy for the Ph.D. degree; a student who does not pass the examinations may be permitted to retake them at a later date or be dropped from the degree program of the department, at the discretion of the advisory committee and the graduate studies committee.

Dissertation. A dissertation must be written under the direction of and with the approval of a five member committee, one of whom must be from outside the Department of Political Science. The membership of the dissertation committee will normally be different from that of the advisory committee. A dissertation prospectus must be approved by the members of the dissertation committee and filed with the director of graduate studies. Students must register for a minimum of 24 hours of dissertation credit, POLS 600, and cannot register for dissertation credit until they have been admitted to candidacy or, with the approval of the advisory committee and the director of graduate studies, until the term during which preliminary examinations are scheduled.

An acceptable dissertation must be completed within five years after admission to candidacy, or the student will have to repeat preliminary examinations. Final copies of the dissertation should be submitted to the members of the dissertation committee no later than ten days before the scheduled oral examination. The success of a final oral examination devoted primarily to a defense of the dissertation and open to the public will complete the requirements for the Doctor of Philosophy degree. A final copy of the dissertation must be filed with the director of graduate studies.

Application of Rules and Exceptions. The department's rules in force at the time of the student's admission to the Ph.D. program will apply while the student is in the program unless (1) the student voluntarily selects a newer

set of rules before graduation or (2) the time between admission to the Ph.D. program and passing the preliminary examinations exceeds five years. In the latter case, the student will automatically come under the rules in force at the beginning of the sixth year and every fifth year thereafter until the preliminary examinations are passed.

Requests for exceptions to any of the above requirements must be presented in a petition approved and signed by the members of the student's committee, submitted to the director of graduate studies, and approved at a scheduled meeting of the graduate studies committee.

Cooperative Program with University of Illinois at Springfield

The Department of Political Science at SIUC has an agreement with the political studies program at University of Illinois at Springfield (UIS) to facilitate the entry of UIS political studies students into the SIUC political science Ph.D. degree program. SIUC will accept appropriate UIS graduate credits to fulfill course work, methodology, and research tool requirements. UIS students can qualify for accelerated entry into the SIUC doctoral program after two semesters of study at UIS with 24 semester hours completed, a 3.5 GPA, two proseminars, and written evaluations from course instructors. A number of UIS faculty are eligible to serve on graduate student examination and dissertation committees. SIUC will accept up to 12 hours credit for course work, research projects, and internships completed under UIS faculty direction towards the SIUC political science Ph.D. degree. Other course work, residency, and dissertation requirements of the SIUC program must be met as described in other sections of this catalog. For more detailed information, ask the director of graduate studies, Department of Political Science, SIUC.

Courses (POLS)

For more The Department of Political Science offers courses toward the Master of Arts degree and Ph.D. degree in political science and the Master of Public Administration.

403-3 Philosophy of Politics. (See Philosophy 441.)

406-3 American Political Thought. This course is an advanced seminar in American political thought. The course will focus on the founding ideals and practices of the American republic and how these ideals functioned in subsequent social movements, political struggles, and ideological conflicts in American political history.

405-3 Democratic Theory. (same as PHIL 405) An examination of various species and aspects of democratic thought, including the liberal tradition and its impact upon the United States. Prerequisite: 114 or consent of instructor.

408-3 Formal Political Theory. This course is an introductory survey of formal modeling techniques that have been important in Political Science during the latter half of the 20th Century. Included in this survey are such topics and approaches as Game Theory, Social and Public Choice Theory, Voting Theory, Spatial Modeling, Prisoners' Dilemma, Impossibility Theorems, Vote Trading and Public Goods. Prerequisite: consent of instructor.

413-3 Contemporary Intergovernmental Relations. An examination of relationships among national, state, and local governments in the American federal system, with emphasis on recent literature and contemporary issues. Special attention is given to fiscal relations, and specific intergovernmental programs in areas such as housing and environmental quality are examined. Prerequisite: 114.

414-3 Political Systems of the American States. The state level of government viewed with emphasis upon recent developments and current research. Prerequisite: 213.

415-3 Urban Politics. An examination of the environment, institutions, processes, and functions of government in an urban society with particular emphasis on current problems of social control and the provision of services in the cities of the U.S. Prerequisite: 213.

418-3 Political Communications. (See Speech Communication 451.)

419-3 Political Sociology. (Same as Sociology 475.) An examination of the social bases of power and politics, including attention to global and societal political relations, as well as individual-level political beliefs and commitments; primary focus on American politics.

420-3 Interest Group Politics. An examination of the structure, mobilization and impact of interest groups on American political life. The course objectives are to study various normative critiques of American pluralism and examine the political influence of contemporary interest groups, such as labor, racial and women's organizations. Prerequisite: 114.

433-6 (3,3) Constitutional Law. (a) This, the initial course in a two-course sequence, is concerned with the basic structure and power relationships in the American constitutional system. Topics include judicial review, judicial restraint, separation of powers, the federal system, national powers, state powers, the contract clause and substantive due process. Prerequisite: 114. Political Science 330 recommended. (b) This, the second course in the constitutional law sequence concentrates on those provisions of the U.S. Constitution which protect individual rights and liberties against government encroachment. Prerequisite: 114.

435-3 Judicial Process and Behavior. An examination of the process by which judges in both trial and appellate courts at federal and state levels are selected and of the ways in which they make decisions. Attention to the structure of the courts. Study of the communication and impact of judicial decisions. The course will provide some insight into the methods used to study judicial behavior.

436-3 Administrative Law. The procedural law of public agencies, particularly the regulatory commissions but also executive branch agencies exercising regulatory functions. The exercise of discretion and its control through internal mechanisms and judicial review. Prerequisite: 114 or 340 recommended.

437-3 Jurisprudence (Theories of Law). Major schools in legal thinking. Positive law and natural law. Idea of justice and concept of natural rights.

438-3 Women, Legal Practice and Social Change. This course is an advanced seminar in public law with a focus on gender, law and society. This course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the

relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. (See Women's Studies 438).

443-3 Public Financial Administration. An examination of governmental revenues and expenditures, with emphasis on state and local governments. Special attention is given to patterns of taxation and expenditure, intergovernmental fiscal relations, municipal debt and administrative decision-making. Prerequisite: 114.

444-3 Policy Analysis. An examination of basic concepts in the policy sciences, approaches to policy analysis, applications to selected areas of policy and instruments of policy development.

445-4 Administration of Environmental Quality and Natural Resources. (Same as Geography 426.) An examination of institutional arrangement and administrative practices in the protection and use of land, water, air and mineral resources. The course include analysis of responsibility and decision-making at all levels of government (federal, state, and local) as well as corporate, interest group, and individual responses to public programs. Particular attention will be given to administration of federal environmental quality legislation including the National Environmental Policy Act, the Clean Air Act, the Water Pollution Control Act and the Surface Mining Reclamation Act.

446-3 Museum Administration. A comprehensive introduction to museum administration and management, including fiscal and budget oversight; an understanding of museum ethics; acquisition, conservation and exhibition planning; personnel matters; and museum research. Museum practicum and research stressed.

448-3 Museum Colloquium. Provides the student with in-depth experience with four major functional areas of museum administration, curation, education and exhibition-through project-based, practical experience in a professional, working museum. Prerequisite: Art and Design 447 or consent of instructor.

455-3 Democratization. An examination of transitions to democracy from authoritarian rule in countries around the world. Emphasis is on understanding from comparative perspective the social, economic, institutional, political, cultural and international circumstances that promote, inhibit, and even reverse the spread of democratic forms of government.

456-3 Gender and Global Politics. An advanced course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational levels. Topics covered include women's political representation, gender and culture, women's social movements, gender an development, and gendered policy issues.

458-3 Contemporary Europe. Comparative study of contemporary political systems and policy issues. Emphasis on selected countries and common problems

facing governments. Topics covered include the European Community, security institutions, economic, social and other public policies and study of various governing processes.

459-3 Government and Politics Russia. Transitions from Communism in the former Soviet Union. Prerequisite: 250 recommended.

461-3 Governments and Politics of Southeast Asia. Politics and governments of Burma, Thailand, Malaysia, Vietnam, Cambodia, Laos, Singapore, Indonesia and the Philippines. Prerequisite: 250 recommended.

467-3 Government and Politics of the Middle East and North Africa. This course is designed to examine the regional politics and security of the Middle East and North Africa in a historical and comparative context. This course discusses the historical evolution of the modern states in the region, the dynamics of inter-Arab and Arab-Israeli politics and security, the role of ethnicity and religion in domestic and regional politics, and great powers' penetration of the region.

468-3 Comparative Civil-Military Politics. A comparative study of the growth of the relationship of the armed forces with the civilian sector of the body politic, the selection, training, and professionalization of the officer corps, the control of the armed forces by the executive and legislature, the growth of strategic doctrine, insurgency and counter-insurgency warfare, and the analysis of the role of the armed forces as a governing group in a large number of nonwestern states. Prerequisite: 250 recommended.

475-6 (3,3) International Law. (a) Rules and practices governing the nations in their relations in peace and war. Prerequisite: none. 270 recommended. (b) Investigation of special problems in international law. Prerequisite: 270 recommended.

476-3 Religion and Politics. (Same as Sociology 476.) Examines the connection between religious beliefs and institutions and political beliefs and institutions. Comparative studies will focus on religious political movements in the United States and throughout the world.

477-3 The Making of American Foreign Policy. An advanced course dealing with the formulation and administration of American foreign policy. Prerequisite: 378 for undergraduates.

480-3 International Politics. Definition and analysis of the concepts of spheres of hegemony, alliances, regionalism, integration, interdependence, and an evaluation of their application to contemporary international politics. The course will stress the need for the continuing evaluation of the vague role of national power and influence within the framework of a changing world environment.

488-3 International Relations of the Western Hemisphere. Emphasis on the international behavior of Latin American nation-states and/or regions especially related to policy trends and historical and contemporary objectives of the U.S. Prerequisite: none. 270 recommended.

500-9 (3,3,3) Political Methodology. Seminars in empirical research methods (a) Research design. Course covers quantitative and qualitative empirical studies of politics. (b) Introduction to Statistical Analysis. Topic include measurement, probability theory, statistical inference, and estimation for political science research (c) Advanced Statistical Analysis. This course covers regression and other statistical modeling in political science.

501-3 Qualitative Methods. Seminar in qualitative methodology and methods in political science.

502-3 to 6 Topical Seminar in Research Methods. Advanced seminar in empirical research methods. Topics will vary with instructor.

503B-3 Data Preparation and Management-Microcomputer. Prerequisite: enrollment in MPA graduate program or consent of department.

504-3 Pro-Seminar in Political theory. The course will survey a sampling of the best works from the broad and diverse spectrum of political theory

505-3 to 9 (3,3,3) Topical Seminar in Political Theory. Advanced seminar in political theory. Topics will vary by instructor.

510-3 Pro-Seminar in American Politics. Designed to survey the major literature in the field of American government at the graduate level.

512-3 to 9 (3,3,3) Topical Seminar in American Political Institutions. Advanced Seminar in American political institutions. Topics will vary by instructor.

513-3 to 6 Topical Seminar in Political Behavior. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus.

515-3 Seminar in Urban Politics. Student should see director of graduate studies for advance syllabus. Prerequisite: 415 or consent of instructor.

516-3 to 3 Seminar in Political Behavior. An overview of the study of political behavior in American and comparative politics.

520-3 Seminar in American Political Institutions. An overview of the study of American political institutions.

530-3 Pro-Seminar in Public Law. A survey of the major literature in the field of public law at the graduate level.

536-3 Seminar in Comparative Public Law. An examination of judicial systems around the world.

538-3 Topical Seminar in Public Law. A research seminar in which students are expected to produce one or more research papers on selected topics in the public law subfield. Topics will vary with instructor.

540-3 Seminar in Public Management. A capstone course for the MPA program. Examination of the social, political, legal and managerial constraints on the behavior of public administrators. Issues in ethics and the public's expectations of professional administrators are also examined. Prerequisite: enrollment in MPA graduate program or consent of department and completion of at least three of the MPA required courses.

541-3 Seminar in Applied Problems of Public Administration. Study of selected problems in public administration and policy. Emphasis placed on the practitioner's perspective. Prerequisite: 340 or equivalent and enrollment in MPA graduate program or consent of department.

542-3 Public Budgeting and Fiscal Management. An examination of the theory and practice of budgeting in the public sector and of selected elements of fiscal management. The course focuses on administrative aspects of budgeting and is oriented toward preparation of students for careers in the public service. Students utilize primary materials in conducting individual or class projects aimed at development of budgetary skills. Prerequisite: 340 or equivalent and enrollment in MPA graduate program or consent of department.

543-3 Human Resource Management. A study of the processes and procedures used in contemporary public personnel systems. Emphasis is placed on examination of competing models of personnel administration, application of personnel management strategies to specific case problems and public sector labor relations. Prerequisite: 340 or equivalent and enrollment in MPA graduate program or consent of department.

544-3 Program Analysis and Evaluation. An examination of approaches and problems in the analysis and evaluation of governmental programs. Emphasis is placed upon the use of analytical techniques to determine program impact and the use of evaluation in governmental decision making. Prerequisite: graduate level statistics course and enrollment in MPA graduate program or consent of department.

545-3 Organization Theory and Behavior. An examination of various approaches to describing and understanding public organizations and the individuals within them. Emphasis is placed on study of the important theoretical literature in the field and on the applications of the theory of practical management problems in governmental units and agencies. Prerequisite: 340 and enrollment in MPA graduate program or consent of department.

546-3 Leadership in Public Administration. An examination of contemporary theories of leadership and their applicability on the public and non profit sectors. The course emphasizes the range of behaviors and actions relevant to leadership on contemporary governmental organizations and the analysis of factors resulting in leadership success for failure. Restricted to: Enrollment in MPA graduate program restricted to consent of the department.

547-6 A, B (3,3) Topical Seminar in Public Administration. (a) Devoted to selected techniques and tools of public administration; (b) In-depth study of selected problems in the process and environment of public administration. Prerequisite: 340 or equivalent and

enrollment in MPA graduate program or consent of department.

548-3 Seminar in Comparative Public Administration. Comparative study of national and subnational public administrative politics, structures, policies and programs across nations and cultures.

549-3 Administration of Nonprofit Organizations. Examines the characteristics of nonprofit organizations that distinguish them from the public and for-profit sectors. Explores social and economic functions of nonprofits and such administrative issues as fundraising, working with volunteers and governing boards, satisfying tax codes and service distribution. Prerequisite: 340 or equivalent and enrollment in MPA graduate program or consent of department.

550-3 Pro-Seminar in Public Administration. A survey of the major literature in the field of public administration. The course will synthesize and integrate the literature and provide an overview of topics to be covered in greater detail in other seminars. Required of M.A. and Ph.D. students offering public administration as a graduate area before enrolling in more advanced subject-matter seminars.

551-3 Aviation Policy, Law and Regulation. Examination of the history of American aviation policy, law and regulation. The course focuses primarily on the development, implementation and enforcement of aviation policies and regulations at the federal level. Special attention is paid to the interaction of various government agencies and constituency group, such as the aircraft industry, airport authorities, airlines, private pilots and passengers. In addition to the historical survey, students will analyze current policy and regulatory trends and identify future problems and opportunities for American aviation policy. Prerequisite: enrollment in MPAA graduate program or consent of instructor.

552-3 Advanced Airport Administration. This course will address the role and function of the airport administrator, especially related to the tasks of developing, operating and maintaining various airport services to meet the needs of key airport users. This course will study key airport administration cases at primary, commercial service, reliever and general aviation airports. Meeting key airport regulations concerning operations and security will be a focus of the course. Prerequisite: enrollment in MPAA graduate program or consent of instructor.

553-3 Advanced Aviation Safety Administration. The Aviation Safety Administrator's job function and responsibility for safety and accident prevention within an aviation organization is examined using the case study method. The relevant theory, concepts, procedures and techniques of resource allocation, organizational design, decision modeling, task assignment, delegation of authority and responsibility, establishment of organizational goals and priorities and risk management as they relate to Aviation Safety are included. The job functions of an

Aircraft Accident Investigation Team and of an Aviation Safety Inspector will be studied. Aviation safety administration literature will be reviewed. Prerequisite: enrollment in MPAA graduate program or consent of instructor.

554-3 Aviation Planning. Examination of aviation planning at the international, federal, state and local levels. The course focuses primarily on federal aviation planning, but considerable attention is paid to the interdependent relationship between the various levels of planning. Special attention is paid to the planning process and the role of various agencies and client groups within the aviation community. Prerequisite: enrollment in MPAA graduate program or consent of instructor.

555-3 International Aviation. An examination of the economic, legal, political and administrative milieu of international aviation. Students will study the history of the bilateral route agreements, cabotage and the legal and institutional arrangements that have evolved in international air transportation. The course will compare and contrast the domestic and international aviation policy environment. Particular attention will be placed on the emergence of international foreign ownership and marketing alliances that have been created recently, both between airlines themselves, and the dominant computer reservations systems (CRS) in existence. Other topics that will be discussed include both domestic and international labor, infrastructure and tourism development policies. Prerequisite 551 and enrollment in MPAA graduate program or consent of instructor.

556-3 Seminar in Municipal Administration. A study of the literature and recent developments in municipal administration. Emphasis is on literature and developments in areas of long-standing interest—including organization and management, state-local relations and finance and capital improvement. Prerequisite: 340 or equivalent and enrollment in MPAA graduate program or consent of department.

557-3 Public Financial Administration. A study in mobilization and management of financial resources for public projects. Emphasis is on the local government level and on theory, skills, and legislation important to capital improvement and economic development. Topics include tax-exempt borrowing, administration of taxes and charges, intergovernmental grants, and privatization and public-private approaches. Prerequisite: 340 or equivalent and enrollment in MPA graduate program or consent of department.

558-3 Museum Colloquium. Provides the student with in-depth experience with four major functional areas of museums-administration, curation, education and exhibition-through project-based, practical experience in a professional, working museum. Prerequisite: Art and Design 447 or consent of instructor.

559-3 Museum Collection Management. Provides students with the knowledge required to professionally use

and manage a museum's collection. Addresses policies and principles of collections management, law, loans and custody, and acquisitions. Prerequisite: Art and Design 447 or consent of instructor.

560-3 Pro-Seminar in Comparative Politics. Survey of the major literature in comparative politics at the graduate level.

568-3 Research Problems in International Studies. Discussion, design and execution of research projects on non-state, sub-national, national, and supra-national actors and processes that have transnational or world systemic consequence. Required of all students with a Ph.D. concentration in international studies.

569-3 to 9(3,3) Topical Seminar in Comparative Politics. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus.

570-3 Pro-Seminar in International Relations and Politics. Survey of the major literature in international relations and politics at the graduate level.

580-3 to 9 (3,3,3) Topical Seminar in International Relations. Topic will vary with instructor. Student should see director of graduate studies for advance syllabus.

590-1 to 6 Readings. Supervised readings in selected subjects. Prerequisite: the section of 592 for the field in which readings are to be done, 545 for reading in Public Administration and Policy Analysis, or 500a for readings in Methods.

591-1 to 6 Individual Research. Selection, investigation and writing of a research paper under the personal supervision of a member of the department graduate staff. Prerequisite: completion of the appropriate pro-seminar for the field in which readings or individual research is to be done.

592-15 (3,3,3,3,3) Foundations of Political Science. Supervised readings in "classics" of the discipline: (a) American Politics and Government, (b) Comparative Politics, (c) International Relations, (d) Public Law, (e) Political Theory.

593-1 Preprofessional Seminar in Political Science. Designed to give the student an introduction to the major professional roles in the discipline. The requirements of teaching, research, publication and service are covered with discussion of where each fits into the professional role requirements and examples of how each is accomplished. Required of all Ph.D. and M.A. students in political science and other teaching assistants in political science. Graded S/U only.

594-1 Preprofessional Seminar in Public Administration. Guides students in preparing to write their MPA research paper, including writing of the proposal for evaluation by the student's research committee. The internship experience, preparation of resume, conducting job searches and other professional development topics are also addressed. Required of all MPA students. Graded S/U only. Prerequisite: enrollment in MPA graduate program or consent of department.

595-1 to 6 Internship in Public Affairs. Fieldwork in the office of a governmental or quasi-governmental agency. The internship is arranged by the field coordinator of the M.P.A. degree program and provides a stipend as negotiated by the coordinator and agency representative. A paper in which the student correlates academic knowledge with practical internship experience is required. Mid-career M.P.A. students may receive credit upon completion of a paper relating previous work experience to public administration literature and theory. Prerequisite: enrollment in MPA graduate program or consent of department.. Graded *S/U* only.

596-1 to 6 Research Paper in Public Affairs. Upon successful completion of core courses, the student expands and develops a previously written MPA graduate program paper. The project involves an issue or problem in public administration and is written with the approval and under the supervision of the student's committee chair. Graded *S/U* required. Prerequisite: enrollment in MPA graduate program or consent of department.

598-1 Dissertation Prospectus. Workshop in dissertation topic selection and prospectus writing; enrollment required prior to completing preliminary examinations.

599-1 to 6 Thesis. Maximum of six hours to be counted toward a degree. Prerequisite: consent of instructor.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

PSYCHOLOGY

www.psychology.siu.edu/
gradpsyc@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Cashel, Mary Louise, Associate Professor, Ph.D., University of North Texas, 1997; 1997. Child and adolescent assessment; juvenile delinquency and preventative interventions; PTSD.

Chwalisz Rigney, Kathleen, Associate Professor, Ph.D., University of Iowa, 1992; 1992. Health psychology; neuropsychology; group process and intervention; personality.

Clancy Dollinger, Stephanie, Associate Professor, Ph.D., Syracuse University, 1989; 1989. Successful aging; lifespan identity development; caregiving.

Clark, M.H., Assistant Professor, Ph.D., University of Memphis, 2004; 2004. Methodology; quasi-experimentation; meta-analysis; statistics.

DiLalla, David, Associate Professor, Ph.D., University of Virginia, 1989; 1990. Personality and psychopathology; personality assessment; computer-aided assessment; behavioral genetics; sexual violence; social development.

DiLalla, Lisabeth, Associate Professor, Ph.D., University of Virginia, 1987; 1992. Behavioral genetics, social cognition.

Dillon, Ronna, Professor, *Emerita*, Ph.D., University of California, Riverside, 1978; 1978.

Dollinger, Stephen J., Professor, Ph.D., University of Missouri, 1977; 1977. Psychotherapy; personality; child-clinical.

Etcheverry, Paul, Assistant Professor, Ph.D., Purdue University, 2004; 2007. Interpersonal relationships and health; social network; influence on relationship outcomes and substance use; social cognitive factors influence in interpersonal relationships.

Fischer, Ann R., Associate Professor, Ph.D., University of Missouri-Columbia, 1995; 2004. Diversity issues (e.g. gender, sexual orientation, ethnicity); social identity; prejudice and discrimination.

Gannon, Linda, Professor, *Emerita*, Ph.D., University of Wisconsin, 1975; 1975.

Gilbert, Brenda O., Associate Professor, Ph.D., University of Florida, 1985; 1986. Child behavior therapy; pediatric psychology; child abuse.

Gilbert, David G., Professor, Ph.D., Florida State University, 1978; 1985. Brain, genetic, personality, and stimulus/environmental factors promoting substance use, smoking, and marijuana; emotions; EEG; brain imaging; eye-tracking and attention.

Habib, Reza, Assistant Professor, Ph.D., University of Toronto, 2000; 2003. Cognitive neuroscience; brain imaging; cognition and memory.

Hoane, Michael R., Associate Professor, Ph.D., Texas Christian University, 1996; 2004. Animal models of traumatic brain injury and neurodegenerative disease; recovery of function.

matic brain injury and neurodegenerative disease; recovery of function.

Jacobs, Eric A., Associate Professor, Ph.D., University of Florida, 1997; 1999. Experimental analysis of behavior; human operant behavior; verbal behavior; choice and self-control; behavioral ecology; behavioral economics; behavioral pharmacology; contingency management; radical behaviorism; cultural materialism.

Jensen, Robert, Professor, *Emeritus*, Ph.D., Northern Illinois University, 1976; 1981.

Kibby Michelle Y., Assistant Professor, Ph.D., The University of Memphis, 1998; 2004. Neuropsychology; brain-behavior relations; reading disorders; ADHD; child assessment.

Komarraju, Meera, Assistant Professor, Ph.D., Osmania University Hyderabad, India, 1982; Ph.D., University of Cincinnati, 1987; 2006. Personality and cross-cultural differences in academic motivation and achievement; conflict management; work-family interface.

Lakshmanan, Usha, Professor, Ph.D., University of Michigan, 1989; 1990. Psycholinguistics; bilingualism; child first language acquisition (monolingual & bilingual); child and adult second language acquisition; language and cognition.

McHose, James H., Professor, *Emeritus*, Ph.D., University of Iowa, 1961; 1961.

McKillip, John A., Professor, *Emeritus*, Ph.D., Loyola University of Chicago, 1974; 1975.

Meltzer, Donald, Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1963; 1966.

O'Donnell, James P., Associate Professor, *Emeritus*, Ph.D., University of Pittsburgh, 1965; 1965.

Pitz, Gordon F., Professor, *Emeritus*, Ph.D., Carnegie Institute of Technology, 1963; 1963.

Radtke, Robert C., Associate Professor, *Emeritus*, Ph.D., State University of Iowa, 1963; 1966.

Ramanaiah, Nerella, Professor, *Emeritus*, Ph.D., University of Oregon, 1971; 1971.

Rodriguez, Benjamin, Associate Professor, Ph.D., The Catholic University of America, 2001; 2003. Anxiety disorders; PTSD; religion and coping; epidemiology; social and public speaking anxiety.

Rottinghaus, Patrick J., Assistant Professor, Ph.D., Iowa State University, 2004; 2004. Career development and assessment; career self efficacy; vocational interests; personality; positive psychology.

Schill, Thomas R., Professor, *Emeritus*, Ph.D., Oklahoma State University, 1963; 1963.

Schlesinger, Matthew, Associate Professor, Ph.D., University of California, Berkeley, 1995; 2000. Early cognitive

development; problem-solving; motor control; computational models of sensorimotor cognition.

Schmeck, Ronald R., Professor, *Emeritus*, Ph.D., Ohio University, 1969; 1969.

Smith, Douglas C., Professor, Ph.D., Kansas State University, 1977; 1978. Biopsychology; neurophysiology; vision; development; learning and memory; recovery of function; epilepsy; psychoactive drugs.

Snyder, John F., Associate Professor, *Emeritus*, Ph.D., Loyola University, 1965; 1968.

Stockdale, Margaret, Professor, Ph.D., Kansas State University, 1990; 1990. Industrial /organizational; gender bias in personal decision making; sexual harassment; other gender issues in the workplace, law and psychology.

Swanson, Jane L., Professor and *Chair*, Ph.D., University of Minnesota, 1986; 1986. Career choice and development; career assessment; adolescent career exploration.

Tinsley, Howard E.A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1971; 1973.

Vaux, Alan, Professor and *Dean*, *College of Liberal Arts*, Ph.D., Trinity College, 1979; Ph.D., University of California/Irvine, 1981; 1980. Community psychology; social support and stress; close relationships and personality; violence; prevention; social interventions.

Wang, Yu-Wei, Assistant Professor, Ph.D., University of Missouri-Columbia, 2004; 2004. Stress, trauma, assault/abuse; suicide; multicultural and international issues; research methodology.

Weston, Rebecca, Associate Professor, Ph.D., University of North Texas, 2001; 2003. Interpersonal relationships; violence; psychological abuse; sexual assault, and relationship outcomes; advanced multivariate statistics.

Yanico, Barbara, Associate Professor, *Emerita*, Ph.D., The Ohio State University, 1977; 1978.

Young, Michael, Professor, Ph.D., University of Minnesota, 1995; 2000. Judgment of event dynamics; judgment and production of variety; computational modeling of learning processes.

The Department of Psychology (www.psychology.siu.edu) offers graduate work leading to the Master of Arts, Master of Science, and Doctor of Philosophy degrees with a major in psychology with concentrations in the following areas: experimental, clinical, and counseling psychology. The primary emphasis is on doctoral training, for which the master's degree is a prerequisite usually earned en route to the doctorate. We do not admit students who seek a terminal master's degree.

The goal of graduate study in the Department of Psychology at SIUC is to develop psychologists who will have a broad perspective and scientific sophistication as well as the requisite skills to advance the field of psychology and meet changing needs. The program emphasizes formal course work in the core curriculum and in the concentrations, preprofessional activities in training assignments, research, teaching, and practicum opportunities.

Admission and Advisement

Separate application forms must be submitted to the Department of Psychology and to the Graduate School. Graduate School and departmental application forms may be obtained from the Department of Psychology (e-mail to gradpsyc@siu.edu). Separate forms are not required for application for financial assistance, except for Graduate School fellowships. Students will be accepted for graduate work in psychology only upon approval by the departmental admissions committee as well as the Graduate School. Evaluations of applicants by the departmental admissions committee are based on information from the application form, GRE scores, transcripts, and letters of recommendation. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Psychology. Applicants may pay this fee by credit card if applying electronically.

Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank. Upon admission to the department, each student is assigned to a faculty adviser, who assists in academic matters, including the planning of the student's program of study: required courses, planned electives, anticipated dates for fulfillment of specified requirements, and so forth.

A new adviser may be assigned to a student for 2 reasons: (a) the student or adviser may request a change of adviser; (b) the student may change to a different area of concentration. Requests for a change of adviser should be made in writing to the student's area committee. To change area of concentration, the student should petition the subcommittee of the new area.

Core Curriculum

All students must complete the following minimum requirements which may be supplemented by requirements specific to concentration areas.

1. Two of three courses from 522, 524, and Educational Psychology 507.
2. 509 for students who have not completed a course in the history and systems of psychology.
3. Thesis (599) registration; students enrolled in the master's degree program should complete the thesis requirement (599, 4–6 hours) by the end of the second year.
4. (Students in the Clinical and Counseling areas only) one course from each of the four core coverage areas specified by the American Psychological Association. A list of courses which meet core coverage requirements is maintained by the department.

Areas of Concentration

APPLIED PSYCHOLOGY CONCENTRATION

The Applied Psychology (AP) program is designed for students interested in research careers dealing with applied problems in non-academic and academic settings. The program provides students with training in research and data analysis methods that can be applied to a variety of problems in public and private sector.

Students in the AP take the following courses in addition to departmental requirements described above. (a) Statistics and measurement: PSYC 522, 524, 525, and either 529 or 575; (b) Program evaluation and research methods: PSYC 465, 523, and 564; (c) At least three of the following Psychology content courses: PSYC 411, 461, 511, 515, 553, 565, 566, 567, 568, or other courses approved by the faculty. In addition AP students take 571 (Proseminar in Applied Psychology) during their first semester in the program, and PSYC 569 (Applied Research Consultants) from their second year until admission to the doctoral program or for 2 summers and 4 semesters, whichever is longer. AP students develop a *specialization* consisting of at least three graduate courses, additional readings, and/or independent study. A specialization plan and paper is developed with and approved by a specialization committee.

BRAIN AND COGNITIVE SCIENCES CONCENTRATION

The Brain and Cognitive Sciences program (BCS) emphasizes cognitive behavior approached from a combination of developmental (infancy and childhood, adolescence and aging), neurobiological (neurophysiology, neuropsychology, genetics), behavioral (human and animal experimentation) and computational (neural networks, statistical analyses, intelligent software agents) perspectives. Students specializing in Brain and Cognitive Sciences typically pursue careers in academic settings such as departments of psychology, neuroscience, cognitive science or medical schools, or in non-academic settings such as pharmaceutical companies, hospitals, or in government research facilities.

In addition to department requirements, BCS students will take four courses from the following three pairs: PSYC 511 and 515 (Cognitive), PSYC 554 and 555 (Developmental), and PSYC 514 and 516 (Biopsychology). They must choose at least one course from each pair. Students will get experience with at least two different research methodologies (behavioral/cognitive experimentation, computational modeling, neurobiological experimentation, psychological assessment) either through individual research or appropriate course work, and must enroll for PSYC 572 (BCS proseminar) throughout their tenure in the department. Additional four to six courses are required for the *specialization*.

CLINICAL PSYCHOLOGY CONCENTRATION

The Clinical Psychology program, approved since 1961 by the Accreditation Committee, Education Directorate of the American Psychological Association, is designed to train clinical psychologists for careers in clinical service, teaching and research. In addition to completing a required departmental core (designed in accordance with APA accreditation and state licensing board requirements), students take required courses in clinical skills, psychopathology, assessment, therapy, and ethical/professional issues (PSYC 594C, 535 or 432, 540, 530, and 598).

Students in the *Adult Clinical Psychology* specialization take required courses in experimental approaches to personality and experimental approaches to psychotherapy (532 and 539), and several electives focusing on assessment and treatment. Students in the *Child Clinical Psychology* specialization take two required developmental psychology courses (one of which usually fulfills a core requirement), and several courses in child assessment plus child treatment (543, 556, and 559).

COUNSELING PSYCHOLOGY CONCENTRATION

The Counseling Psychology program, approved since 1961 by the Accreditation Committee, Education Directorate of the American Psychological Association, is designed to teach students a wide range of skills which will prepare them to function as scientist-practitioners. Graduates are qualified for employment in a university setting (either in an academic department or a counseling center), in hospitals, community agencies, and educational and correctional institutions. The student is expected to develop competence in counseling, psychological assessment, research, and teaching. The required courses are as follows: 523, 525, 526, 530, 536, 537, 538, 540, 548, 553, 558, 561, 594F, and 598.

Research, Practicum, and Training Assignments

Research or practica are required in each area of concentration. In addition, each term the student must be engaged in a training assignment which supplements formal course work by professional activities such as research, teaching, or clinical service. The assignment varies according to the needs, professional goals, and competencies of the student, and increases in responsibility as the student progresses. The assignments require from 10 to 20 hours of service per week. This is a degree requirement of all students each term and is independent of any financial support. Therefore, each term the student signs up for one hour of 597.

Master's Degree Requirements

The master's degree requires a minimum of 48 semester hours of acceptable graduate credit, distributed according to the requirements of the student's major area, and the completion of an approved thesis. The master's thesis may be either original research or the replication of an important

study. The master's degree is a prerequisite for the doctorate.

Doctoral Requirements

Admission. Admission to the Ph.D. program requires a master's degree, a grade point average of 3.25 or above in graduate studies, and acceptance by the department. A student who receives the master's degree from SIUC must apply formally to the Graduate School for admission to doctoral-level study, and must be approved by the faculty.

Records of students entering the program with a master's degree from another institution are evaluated by the departmental admissions committee which notes deficiencies, recommends methods for removing them, and specifies a time limit to do so. Such deficiencies must be removed before the student can be classified as a Ph.D. candidate. The student is recommended to the graduate dean for admission to Ph.D. candidacy only when core curriculum requirements and the preliminary examination(s) have been satisfactorily completed.

Accelerated Entry into Ph.D. Degree Program. Students enrolled in the M.A. degree program may be admitted directly to the Ph.D. degree program following departmental certification of graduate work comparable to a master's degree in psychology at SIUC. Accelerated entry is acceptable only for students who have completed substantial work in other programs in psychology which grant the Ph.D. degree but not a master's degree. Students seeking accelerated entry may apply after enrollment at the master's level for one semester. Applications for accelerated entry are reviewed and decided by a faculty committee appointed by the department chair.

Internship. Doctoral students who are concentrating in counseling or clinical psychology must complete an approved internship. The internship is viewed as an integral part of training and the Ph.D. degree is not awarded until the completion of all academic work and the internship. Students are responsible for scheduling and obtaining internships. Internships in counseling and clinical psychology require a full-time experience either for one calendar year, or for two years of half-time experience. Counseling and clinical students are approved for internship after completion of their master's degree, major and minor preliminary examinations, and all courses required for the Ph.D. Clinical students must have an approved dissertation prospectus before applying for internship.

Students in applied psychology are encouraged to complete an internship in an applied setting away from campus that is selected with the help of their faculty advisers in their major area of concentration.

Preliminary Examinations. Ph.D. candidacy is contingent upon successful completion of a written preliminary examination in the student's major area of concentration. The examination is composed primarily of essay questions

requiring substantive knowledge of empirical and theoretical topics. Questions are not limited to course content.

Every student is expected to pass each examination on first taking. In any event a second failure on a preliminary examination will result in a thorough faculty review of the student's entire academic record in order to determine whether the student will be allowed to continue in the program and, if continued, under what conditions.

Major/Comprehensive. Fields of concentration for the major/comprehensive preliminary examination are listed below:

1. Experimental. Either applied psychology or brain and cognitive science may be selected for the comprehensive examination.
2. Clinical. The major examination includes the following: psychological assessment, psychotherapy, psychopathology, research methods, and professional/ethical issues. In addition for the student, the examination reflects the specialization emphasis, i.e., adult or child.
3. Counseling. The major examination includes the following areas: (a) adult personal, social, and career development, (b) assessment, (c) group and individual counseling theories and techniques, (d) research methodology and measurement, and (e) professional issues.

Major/comprehensive examinations are scheduled by the department once a term. Notices are posted well in advance and students are expected to notify the graduate secretary of their intention to take the examination. Examination committees are appointed by the chair.

Minor/Specialization. In addition to the major/comprehensive preliminary examination, a specialization paper is required in the experimental area.

Dissertation. Each candidate for the Ph.D. degree must write a dissertation showing high attainment in independent, original scholarship and creative effort. A total of 24 semester hours is required. A maximum of 8 hours of dissertation credit taken prior to passing the major preliminary examination will count. A student may not hold a prospectus meeting before successful completion of the preliminary examination.

Thesis and Dissertation Committee

Because the thesis or dissertation project and the proposed committee composition must be formally approved by the department chair, the student should submit the proposed committee in writing for approval by the chair well in advance of the prospectus meeting.

A master's thesis committee consists of 3 or more faculty members and a dissertation committee of 5 or more faculty members (counting the committee chair). Committee chairs and a majority of committee members must be tenure-track faculty of the Department of Psychology. Thesis and dissertation committees must have 1 Psychology faculty member outside the student's program area—to better

reflect the diversity of departmental perspectives. Dissertation committees also must have a faculty member from a department other than Psychology.

Prospectus. Prior to starting the empirical research on a thesis or dissertation, a student must submit a written prospectus to each member of the committee at least one week prior to the prospectus meeting. A carefully written prospectus ordinarily serves as the opening chapters of the thesis or dissertation.

The approval of the prospectus indicates that the committee members accept the research design. Faculty members not on the committee may attend the prospectus meeting, or may forward suggestions and comments to the committee chair prior to the meeting. Prospectus meetings are not scheduled during the recess period between semesters.

If the prospectus is approved with no major modifications, a letter of approval, noting any minor modifications is sent by the committee chair to the department chair for filing in the student's permanent records. If major modifications are needed, the student may be asked to rewrite the prospectus, circulate the revised prospectus and arrange another committee meeting. A prospectus must be approved at least one semester before graduation.

Style. The student has the option of writing the thesis or dissertation in the traditional fashion or in journal style. In the latter case, ancillary material (full survey of literature, subsidiary analyses, etc.) are placed in the appendices, although figures and tables appear in the text. The psychology department prefers that citations, table headings, etc. follow the APA style (*Publication Manual of the American Psychological Association*, latest edition, Washington, D.C.).

General Procedures. Students should not register for 599 or 600 hours until they have supervisors and will actually be using university facilities, or faculty time for assistance and direction.

Prior to graduation (a minimum of 5 weeks for master's students and 8 weeks for doctoral students), and at least one week prior to the oral defense meeting, the candidate must submit a final draft of the thesis or dissertation to the full committee so that appropriate suggestions can be made.

Number of Copies. Two bound copies of the complete thesis or dissertation are required: one for the committee chair, and one for the departmental thesis and dissertation library.

Oral Examination

The Department of Psychology requires an oral examination, conducted by the student's thesis or dissertation committee, for each M.A. and Ph.D. candidate. The exami-

nation covers the thesis or dissertation and also includes questions designed to ascertain the student's general competence in psychology.

Oral examinations are open to all interested observers. Notices of the time and place of the examination, and abstracts of the thesis or dissertation, are circulated throughout the department and, in the case of Ph.D. examinations, throughout the University. Two copies of the abstract should be given to the graduate program secretary at least one week prior to the oral defense meeting.

The candidate obtains copies of the oral examination form and the thesis or dissertation evaluation form from the graduate program secretary, and delivers them to the committee members on the day of the orals. Orals meetings are not scheduled during the recess period between semesters.

General Information

Waiving of Course Requirements. Students who wish to have a course waived should consult with their advisers, the course instructor, and the head of their major area. One of the following recommendations will be made: (a) the course will be waived; (b) a proficiency examination (theoretical, practical, or both) will be given prior to deciding on the student's request; (c) the request will be refused and the student will take the course. A student may appeal the decision by writing a letter to the department chair requesting that the case be reviewed.

Grading Policies. Any student who receives a grade of *Inc.* is responsible for contacting the instructor to determine the time allowed for the completion of the course (normally not more than one year).

For internal records to be used within the department only, pluses and minuses are added to the standard *A*, *B*, *C* grades reported to the Office of Admissions and Records.

Student Evaluation. All students are evaluated by the faculty at least once a year, normally during fall semester. New students are evaluated in the beginning of spring semester (first year) and students on departmental probation at times specified in their probation. The evaluation is based on the following criteria: (1) academic performance on a ten point rating scale ($A^+ = 10$); (2) ratings on the training assignment; and (3) progress toward the degree. The student's evaluation may also be based upon evidence relating to professional attitudes or ethical behavior.

Each student's adviser informs the student of the evaluation and of any faculty recommendations as soon as possible after the meeting. In addition, the department chair writes a formal letter notifying the student of the evaluation and recommendations.

Courses (PSYC)

407-3 Theoretical Issues in Learning. An introduction to the major theoretical issues in learning and their importance. A brief review of the history of such problems will be followed by a summary of the current research concerning these issues. Traditional figures in learning theory will be considered within the context of their positions on specific questions. Prerequisite: 211 and 309 or equivalent, or graduate status.

409-3 History and Systems of Psychology. A review of the conceptual and empirical antecedents of modern psychology. Prerequisite: 211 and senior status or graduate status.

411-3 Applied Learning. An in-depth coverage of practical problems concerned with training to which the principles of learning derived from pure laboratory investigations can be applied. Prerequisite: 211 and 309, or graduate status.

413-3 Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex, race and socioeconomic status. Prerequisite: 211 and 305, or graduate status.

415-4 Psychopharmacology. A survey of the effects of drugs on the normal and abnormal behavior of humans and animals. A primary focus is upon understanding drug influences on behavior in relation to actions on the nervous and endocrine systems. Prerequisite: 211 and 302 or graduate status.

416-3 Recovery of Function Following Brain Damage. A survey of experimental animal and human clinical research as they relate to behavioral recovery following damage in the central nervous system. Recent theories and literature are stressed. Prerequisite: 211 and 302, or graduate status, or consent of instructor.

419-3 Behavioral Genetics. Provides an overview of the experimental and quantitative methods used in studying behavioral differences associated with genetic variables. Elementary aspects of genetics will be included in the course, which will examine several aspects of both human and nonhuman behavior. Prerequisite: 211 or consent of instructor, or graduate status.

420-3 Industrial/Organizational Psychology. Topics in industrial and organizational psychology; applications of psychology to human resource management, such as job analysis, performance appraisal systems, personnel selection and training. Prerequisite: 211.

421-3 Psychological Tests and Measurements. Introduction to test theory and test development. Detailed coverage of selected tests from such areas as intelligence, aptitude and personality. Prerequisite: 211 or graduate status.

431-3 Advanced Psychopathology. An advanced presentation of theoretical and empirical issues in contemporary psychopathology research. Explores the role empirical research plays in understanding the features of major psychological disorders and their treatment. Provides a broad understanding of the many factors that contribute to the development and maintenance of abnormal behaviors. Prerequisite: 211, 331 or consent of instructor or graduate status.

432-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: 211, 301, 311 or graduate status.

440-3 Advanced Personality. Advanced presentation of theoretical and research issues related to current issues in personality psychology. The overarching focus of the course is presentation and discussion of a scientific approach to understanding what personality is, how it can be measured, how it develops, and how it relates to various aspects of individual functioning. Prerequisite: 211 or consent of instructor.

441-3 Helping Skills in Clinical and Counseling Psychology. Provides systematic training in helping skills for students considering clinical or counseling psychology as a career. Students learn to identify and demonstrate such skills as paraphrasing, reflection of feeling, interpretation, and confrontation and will use them in practice situations. Prerequisite: 211 and 340 and senior standing in psychology major.

445-3 Psycholinguistics. (Same as Linguistics 445.) A broad spectrum introduction to psycholinguistics. Topics to be covered include general methodology for the study of psycholinguistics, the nature of language, theories of human communication, language comprehension and production, first and second language acquisition, meaning and thought, natural animal communication systems, and language and the brain. Prerequisite: 211.

451-3 Advanced Child Psychology. An assessment of concepts, methods and research techniques within selected topic areas of developmental psychology. This course satisfies the CoLA Writing-Across-the-Curriculum requirement. Prerequisite: 211 and 301 or graduate status or consent of instructor.

461-3 Advanced Social Psychology. Critical examination of contemporary theories and research in social psychology. Practice in application of scientific findings to real-life problems of individuals and groups. Issues treated in depth are chosen for relevance to student's personal needs and career interests. Prerequisite: 211 and 307 or graduate status.

464-3 Social Factors in Personality and Behavior. (Same as Sociology 426) Advanced study of social psychology from both sociological and psychological perspectives. Analyzes the reciprocal influence of groups and individuals, including the development of self, social interaction, gender and ethnic relations, impression management, interpersonal attraction, and social influence. Prerequisite: 211 and 307.

465-3 Applied Social Science Research Methods. This course will introduce students to a variety of research methods and techniques that are used by social scientists in applied contexts. Students will learn the fundamentals of data collection in a variety of contexts, such as from archival data sources, survey research, interviews and focus groups. Students will also learn how to use spreadsheets and statistical software (SPSS) to analyze data, and they will gain experience with report writing. Students will have opportunities to practice and demonstrate these skills through classroom exercises and projects. Prerequisite: 211 and senior standing in psychology major or graduate status or consent of instructor.

466-3 Intermediate Statistics in Psychology. Covers statistical techniques relevant to psychology and other social sciences and provides a bridge between introductory and graduate statistics courses. Topics include one-way and factorial analysis of variance, repeated measures analysis of variance, simple and multiple regression, any analysis of covariance. Students will learn how to use SPSS, a computer based statistical package. Prerequisite: 211 and consent of instructor.

470-3 Psychology of Race and Racism. (Same as Black American Studies 472.) This course reviews the history and evolution of the construct of race as a psychological phenomenon. While the course will be largely psychological in nature, the pervasiveness of race in practically every sphere of life necessitates a multidisciplinary approach. The course will emphasize a theoretical and conceptual approach toward understanding the psychology of racialized thinking. Prerequisite: 211.

471-3 Judgment and Decision Making. A survey of the academic field of judgment and decision-making, its major methods, theories, results, and controversies. We will examine the generality of experimental results across various domains including gambling, clinical prediction, perception of randomness, and medical decisionmaking. Prerequisite: 211 or graduate status.

489-1 to 12 Seminar: Selected Topics. Varied content. Offered as need exists and as faculty interests and time permit. Prerequisite: 211 and consent of instructor.

503-3 Individual Differences. Reviews the reliable and theoretically significant individual and group difference that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as sex,

race and socioeconomic status. Prerequisite: graduate status in Psychology.

507-3 Advanced Social Psychology. Review of new and traditional theories and research findings within social psychology. Provides an overview of major areas of study and consideration of more recent topics of study. Topics include (but are not limited to) cultural and evolutionary perspectives in social psychology, motivation, social cognition, self-knowledge, person- perception, cognitive consistency, attitudes, intergroup relationships, stereotyping, and group behavior. Prerequisite: Graduate standing.

509-3 History and Systems of Psychology. A review of conceptual and empirical antecedents of modern psychology. Students research and summarize topics on 20th Century systematic developments. Prerequisite: graduate status in Psychology.

511-3 Human Learning and Memory. Reviews principles of learning and memory. Covers both human and animal research literature from experimental and theoretical perspectives.

512-3 Sensory Processes. A study of the structure and functions of the sense organs. Emphasizes the psychological data, which describe the function of these organs.

513-3 Human Psychophysiology. Physiology, instrumentation, and methodology of psychophysiological measurements including both autonomic and central nervous systems. Attention will be given to basic and applied research. Prerequisite: graduate standing.

514-4 Neurobiological Bases of Behavior. An advanced survey of neuroanatomical and neurophysiological principles underlying behavior. Topics covered include structure and function of neurons, synaptic transmission, sensory processing, motor control, development and plasticity of the nervous system and other current topics in neurobiology. Prerequisite: 302 or equivalent and consent of instructor.

515-3 Theory and Research in Cognitive Psychology. A detailed survey of current studies of attention, short-term memory and thought processes. Prerequisite: consent of instructor.

516-4 Human Clinical Neuroanatomy. Basic functioning of the nervous system, detailed gross anatomy and dissection of the human brain, functional disorders following brain damage, noninvasive cranial nerve examination. The course includes a lab component. Prerequisite: graduate standing.

517-3 Aging, Memory and Cognition. A detailed survey of current methodology, research and theory dealing with cognitive and memory processes in later adulthood. Topics covered include attention, memory, reasoning and problem solving, language processing and inference and age-associated pathologies affecting cognition and memory. Prerequisite: consent of instructor.

518-4 Psychopharmacology and Behavior. A detailed survey of the effects of drugs on the normal and abnormal behaviors of human and animals. A primary focus is upon

understanding drug influences on behavior in relation to actions on the nervous system, endocrine system and behavior pathology. Students review and summarize original research in the area. Prerequisite: graduate status in psychology or permission of instructor.

519-3 Research on Individual Differences. Reviews the reliable and theoretically significant individual and group differences that have been revealed by research in the behavioral sciences. Examines differences in general intelligence, specific verbal and spatial abilities, stylistic and personality characteristics, as well as such group differences as gender, race and socioeconomic status. Students review and summarize original research in the area and lecture on that topic. Prerequisite: graduate status in psychology or permission of instructor.

520-3 Applications of the Psychology of Learning and Memory. A survey of the theories and methods of training that have resulted from research in the areas of learning and memory. Students will review some of the very recent methods as well as those that are better developed. Practice will be provided. Prerequisite: 309 or consent of instructor.

522-4 Experimental Design and Analysis. In-depth coverage of the rationale underlying the design and analysis of complex experimental designs used in psychological research. Prerequisite: psychology graduate student and Educational Psychology 506 or equivalent.

523-3 Research Methods in Applied & Professional Psychology. Discussion of problems in experimental and quasi-experimental design, control and analysis that are encountered by researchers in applied and professional psychology. The course covers critical evaluation of internal, construct, and external validity and the application of randomized and non-randomized designs for causal inference. Passive-observational and qualitative designs are covered at the instructor's discretion. Examples of current research practice from applied, counseling and clinical psychology are reviewed. Prerequisite: graduate status in psychology or consent of instructor.

524-3 Multivariate Methods of Psychology. Detailed treatment of multiple-factor analysis and multiple regression analysis. Also includes introduction to other multivariate methods such as discriminant analysis and cluster analysis. Prerequisite: 522b and Psychology graduate status, and consent of instructor.

525-3 Psychological Measurement. Intensive coverage of such topics in test theory as item analysis, reliability, validity, problems of weighting in differential prediction, and problems in selection and classification. Prerequisite: 421 or consent of instructor.

526-3 Research in Counseling Psychology. This course provides a basic foundation of research skills. The course includes extensive reading in counseling psychology research and coverage of research design, specific research techniques, technical writing and research ethics.

527-3 Theory and Methods of Scaling. The theory of measurement, by which observed behavioral events can be translated into quantitative scales of psychological constructs. The course will cover several axiom systems that form the foundation for psychological measurement, including representation in more than one dimension. Prerequisite: 522b.

528-3 Decision Analysis: Techniques for Aiding Decisions. A survey of formal methods for making decisions, based on subjective probability and multiattribute utility assessments. Students will be given practice in using methods of decision analysis for solving decision problems. Prerequisite: 522a or consent of instructor.

529-3 Advanced Applied Multivariate Statistics. This course will introduce multivariate analyses such as structural equation modeling, hierarchical linear modeling and latent curve analysis, with additional topics addressed dependent upon student interest (e.g., missing data, categorical and/or dyadic data analysis). After presenting conceptual information on latent variable analysis, the course will focus on the application of advanced analytic techniques. Understanding of correlation and regression is essential for this course. Prerequisite: graduate level multivariate statistics course.

530-3 Theories of Counseling and Psychotherapy. A survey of the major theories of personality and systems of counseling and psychotherapy. Stresses relationship between theory and application. Prerequisite: consent of instructor.

531-3 to 6 Community and Institutional Field Placement. Introduction to a variety of area agencies with each student affiliating with two agencies at least two days per week. Individual and group supervision with special attention to the variety of clinically related problems and approaches to treatment encountered in the course of their activities. Required for clinical students. Prerequisite: 530b, psychology graduate in clinical or counseling.

532-3 Development, Personality & Psychopathology. An extensive review and systematic evaluation of theories and research pertaining to developmental processes as they influence temperament, personality and psychopathology with emphasis on normal and disordered pathways. Prerequisite: Graduate status or consent of instructor.

533-2 Experimental Approaches to Psychopathology. An examination of the research literature on several issues in clinical psychopathology. Prerequisite: psychology graduate or consent of instructor.

534-3 Cognitive and Behavior Therapy. An extensive review and systematic evaluation of clinical methods including desensitization, assertion training, cognitive restructuring, and conditioning strategies. Prerequisite: Graduate status (clinical/counseling) or consent of instructor.

535-3 Psychopathology. Surveys the following issues and content areas in psychopathology: models and definitions of psychopathology, anxiety states, depression, schizo-

phrenia, neurosis, behavior genetics, the mental hospital and the classification of psychopathology. This course required for all clinical students within their first two years. Prerequisite: psychology graduate student or consent of instructor.

536-4 Fundamentals of Counseling. An introduction to counseling psychology as a professional specialty. Professional and ethical issues in the training and work of counseling psychologists are examined. Basic counseling skills are acquired through practice interviewing. Prerequisite: psychology graduate student or consent of instructor.

537-3 Advanced Treatment Planning and Implementation. Presentation of systematic treatment selection approaches and formal treatment planning. A detailed survey of various empirically supported psychotherapy treatments, particularly brief therapy approaches, will be provided, with focused training in one empirically supported treatment. Students will be expected to generate formal treatment plans during the course. Prerequisite: psychology graduate status.

538-3 Theory and Practice of Group Facilitation. Didactic presentation of group dynamics and group counseling/therapy. Theories coordinated with facilitation of Psychology 101 groups. Prerequisite: graduate status.

539-3 Experimental Approaches to Psychotherapy. A review and evaluation of empirical research related to the amelioration of maladjustment. Emphasis is on measurement and methodological problems. Prerequisite: 530 or consent of instructor.

540-4 Psychological Assessment. Basic theory, practice and research on psychological assessment with emphasis on objective, validated measures of intelligence and personality. Includes one hour laboratory section. Prerequisite: psychology graduate status.

541-3 Psychopathology of Childhood. An extensive review and systematic evaluation of theories and research pertaining to the behavior disorders of childhood. Emphasis will be upon empirical data and the implications of these data for the classification and treatment of these disorders. Prerequisite: graduate standing.

542-3 Principles and Problems in Personality Assessment. Critical review of research related to such topics as scale construction strategies, response styles, trait attribution, judgmental accuracy, and judgmental processes. Prerequisite: consent of instructor.

543-3 Advanced Child Assessment. Basic theory, research, and practice in the psychological assessment of children's learning and emotional problems. Prerequisite: 540, consent of instructor and psychology graduate standing.

544-3 Advanced Adult Assessment. Practical experience at conceptualizing psychopathology from a standard clinical test battery and in writing clinically meaningful test reports. Prerequisite: 540, consent of instructor and Psychology graduate standing.

545-3 Introduction to Neuropsychological Assessment. Overview of the development of neuropsychology from signs to test batteries and methodology. Prerequisite: 540, consent of instructor and psychology graduate status.

546-3 Human Clinical Neuropsychology. This course will familiarize students with the basic concepts, empirical foundations, and clinical applications of human clinical neuropsychology. The neurobehavioral manifestations of both acute and chronic conditions will be covered. Prerequisite: 540, psychology graduate status and consent of instructor.

548-3 Vocational Psychology and Career Development. Introduces students to vocational psychology as an area of academic inquiry. Topics include theories of career development, occupational information, career assessment, research issues, and career counseling techniques. Prerequisite: graduate standing.

549-3 Behavioral Assessment. A didactic and practicum course concerned with principles and methods of behavioral assessment including behavioral interviewing, questionnaires, self-monitoring, naturalistic and structured observation and psychophysiological assessment.

550-3 The Psychological Construction of Gender. (See Women's Studies 550).

552-3 Social Development. Consideration of current methods, research, and theory in developmental psychology with particular attention to social and personality development, and parent-child relations. Prerequisite: consent of instructor.

553-3 Cross-Cultural Psychology. Examines different topics in areas such as psychopathology, social and developmental psychology from a cross-cultural perspective. Prerequisite: consent of instructor.

554-3 Life-Span Developmental Psychology. Theories of human development, as well as current research trends and methodologies, will be examined from a life-span perspective.

555-3 Language and Cognition. Current theoretical problems in language and cognitive developments are investigated from the perspective of psychology, physiology, linguistics and computer simulations. Prerequisite: consent of instructor.

556-3 Child Psychotherapy. Survey and analysis of traditional and contemporary approaches to individual child psychotherapy. Includes psychodynamic, humanistic-nondirective, hypnotherapy-imagery and other perspectives as well as therapy outcome research. Prerequisite: consent of instructor and psychology graduate status.

557-3 Family Psychotherapy. Investigation of the psychosocial interior of the family. Evolution and dynamics of interaction in families. Study of the methods of therapeutic intervention with families. Prerequisite: consent of instructor and psychology graduate status.

558-3 Personality and Social Development of Adults. A lecture-discussion course which presents the major theoretical and empirical literature in the area of adult personal-

ity and social development. Students are encouraged to apply normal developmental constructs to understand individual adults, as well as to gain competence in research methods in this area. Prerequisite: psychology graduate student or consent of instructor.

559-3 Behavioral Child Therapy. Survey and analysis of behavioral and cognitive-behavioral approaches to the treatment of child psychopathology. Prerequisite: consent of instructor and psychology graduate status.

560-3 Couples and Marital Therapy. This course is designed to provide doctoral level psychology students the basic theoretical and technical background necessary before beginning to work in supervised marital/couples therapy clinical practice. Prerequisite: Psychology graduate status or consent of instructor.

561-3 Supervision of Psychotherapy. Presentation of the theories and techniques of psychotherapy supervision, as well as cultural, ethical and legal issues in supervision. Students will also provide individual supervision to beginning counselors and receive supervision of their supervision. Prerequisite: Psychology graduates status.

562-3 Adolescent Clinical Psychology. Discusses specific characteristics of adolescent psychopathology, techniques for psychological assessment, common and empirically supported treatment approaches. Prerequisite: psychology graduate student or consent of instructor.

563-3 Research in Attitudes and Persuasion. Detailed review of current theory and research in social psychology of attitude formation and change and of persuasion techniques. Students will develop literature reviews and conduct original research. Prerequisite: graduate status in psychology or consent of instructor.

564-3 Program Evaluation: Experimental and Quasi-Experimental Approaches. Review of experimental and quasi-experimental designs for assessment of program impact. Discussion of design, logistic, and political implementation problems. Detailed examination of a number of attempts at program evaluation. Prerequisite: 500-level statistics course.

565-3 Research in Organizational Psychology. In depth examination of theoretical and research literature in organizational psychology. Topics include, but are not limited to, theory and research literature on work motivation, job attitudes, leadership, group processes, organizational stress and women and minorities in the work place. Prerequisite: graduate status in psychology or permission of instructor.

566-3 Health Psychology. This course will explore the interface between psychological theory and research and health issues including health behavior, prevention and intervention, stress and coping, management of chronic and terminal illness, health care service utilization, and patient/provider interaction. Graduate standing required.

567-3 Stress, Coping and Social Support. Overview of theory and research on stress, coping and social support. Emphasis is on psychosocial approaches to the stress process including life events, hassles, work stress, and

family stress. Social support also is examined, both as a moderator of stress effects and as a valuable resource in its own right.

568-3 Community Psychology. Comprehensive overview of community theory, research, and action. Topics covered include: (1) paradigmatic assumptions of the community approach to psychosocial problems; (2) basic concepts, models and issues including prevention, paraprofessionals, systems theory, and social context; (3) social intervention strategies; and (4) examination of selected contemporary psychosocial problems. Prerequisite: psychology graduate status or consent of instructor.

569-1 to 3 Applied Research Consultants. Consulting firm which provides applied research experiences for advanced graduate students on planning, data gathering, evaluation, and decision making projects for units of university and area agencies and businesses. Students exercise decision making power in all aspects of the firm: project solicitation, fee setting, expenditures. Graded *S/U* only. Prerequisite: 571 or consent of instructor.

570-3 Early Cognitive Development. Surveys the major theories, methods, and data in the field of human cognitive development, with a particular emphasis on the qualitative changes that occur during infancy and early childhood. Prerequisite: consent of instructor.

571-6 (2,2,2) Proseminar in Applied Experimental Psychology. A survey of the problem areas to which applied experimental psychology is applicable and of the principal methods employed by applied experimental psychologists. Integration of these approaches within a comprehensive metatheory. Case studies apply the information to actual and simulated application problems. Graded *S/U*.

572-1 Proseminar in Brain and Cognitive Sciences. Discussions of various research topics within the brain and cognitive sciences. Presentations of current research by faculty and graduate students.

575-3 Computational Modeling. Introduction to computational modeling of cognitive processes. Covers theoretical and methodological issues in computational simulations of psychological behavior. Lectures and practical simulation assignments. Prerequisite: consent of instructor.

576-3 Human Engineering. Analysis of human-machine systems, human factors in the design of display and control systems, limitations and capabilities of the operator. Lecture and research or field study. Prerequisite: consent of instructor.

577-3 Second Language Acquisition (Same as Linguistics 541). Introduction to key concepts and major theoretical and methodological issues in second language acquisition. Major developments in SLA in the areas of phonology, morphology, lexis, syntax, semantics and discourse and provides students with hands-on experience in describing and accounting for second language data. Prerequisite: Introduction to linguistics or consent of instructor.

578-3 Bilingualism (Same as Linguistics 543). A comprehensive introduction to the study of bilingualism. Course

will examine the linguistics, psycholinguistic, sociolinguistic and educational aspects of bilingualism, particularly as pertaining to the care and education of bilingual children. Prerequisite: one previous course in linguistics or consent of instructor.

580-3 Cognition, Affect and Behavior. Provides an integrative exploration of the relations among cognition, affect and behavior (CAB). Foundations of this integration are provided, including examination of basic principles, experimental evidence, and biological bases. Emphases will be placed on learning, stability, self-regulation, and change of CAB, and relationships to individual differences, personality, psychopathology, and genetically influenced temperaments. Prerequisite: Psychology graduate student status or consent of instructor.

581 Developmental Psychopathology. An extensive review and systematic evaluation of theories and research pertaining to developmental psychopathology. Emphasis will be on empirical data and the implications of these data for the classifications and treatment of disorders. Prerequisite: Graduate status and consent of instructor.

585-1 to 18 Advanced Seminar. Seminars of varied content for advanced students. Prerequisite: consent of instructor.

586-1 Proseminar in Clinical Psychology. Required seminar for first-year graduate students enrolled in the Clinical Psychology program. Graded S/U. Prerequisite: Psychology graduate status.

590-1 to 12 Readings in Psychology. Readings in selected topics in psychology under staff supervision. Graded S/U only. Prerequisite: consent of instructor.

591-3 Readings on Culture and Diversity. Readings on multicultural and diversity issues in Clinical Psychology, which may include, but not necessarily be limited to issues of racial and ethnic differences, gender, sexual orientation, socioeconomic status, religious affiliation, and disability, as

they impact the assessment and treatment of psychopathology.

593-1 to 24 Research in Psychology. Research under staff supervision in selected areas of psychology. Graded S/U only. Prerequisite: consent of instructor.

594-1 to 16 Practicum in Psychology. Practicum experience in a professional setting is offered under staff supervision in the following areas: (a) Applied experimental psychology; (c) Clinical skills. Introduction to the professional skills and issues of clinical psychology including ethics, interviewing, change processes, diversity issues. (f) Counseling psychology; (l) Teaching of psychology. Graded S/U only. Prerequisite: consent of instructor.

595-1 to 12 Internship. Placement in an approved setting required of all students in clinical, bio-clinical, and counseling psychology. Graded S/U only. Prerequisite: psychology graduate student.

597-1 to 15 Preprofessional Training. Experience given in research, teaching, or clinical or counseling activities. One hour required each semester of residence. Graded S/U only. Prerequisite: psychology graduate student.

598-3 Ethical and Professional Problems in Psychology. The code of ethics in professional practice, in teaching and research; problems and issues of the field are discussed; and relations to other professions and the public are considered. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 24 Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

PUBLIC ADMINISTRATION

(See Political Science for program description)

RADIO-TELEVISION

(See Mass Communication and Media Arts for program description)

RECREATION

www.siurec.com
herec@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Glover, James M., Associate Professor, *Emeritus*, Ph.D., University of Maryland, 1980; 1984.

Glover, Regina B., Associate Professor, *Emerita*, Ph.D., University of Maryland, 1983; 1983.

Malkin, Marjorie J., Professor, Ed.D., University of Georgia, 1986; 1989. Recreation therapy, depression, suicide, substance abuse, counseling techniques, research methods.

McEwen, Douglas N., Professor, *Emeritus*, Ph.D., Michigan State University, 1973; 1975.

Teaff, Joseph D., Professor, *Emeritus*, Ed.D., Columbia University, 1973; 1980

Ward, Whitney C., Assistant Professor, Ph.D., Indiana University, 2008; 2007. Adventure leadership, group dynamics, wilderness medicine, value of wilderness.

Yang, Heewon, Assistant Professor, Ph.D., Indiana University, 2002; 2004. Therapeutic recreation intervention programs for adolescents with aggressive behavior, therapeutic recreation intervention programs for adopted children with special needs; relationship between aggressive behavioral tendencies and free time boredom, cinematherapy as a cognitive-behavioral therapy.

The Recreation program in the Department of Health Education and Recreation offers a broad interdisciplinary program of studies preparing students for administrative careers in recreation management. The program leads to the Master of Science in Education degree with a major in recreation. This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Recreation. Applicants can pay this fee by credit card when applying electronically. For details on applying to the Recreation graduate program go to www.siurec.com

Master of Science in Education Degree

Graduate work in recreation stresses administration and research and is open to highly qualified students. All students must be admitted to the Graduate School in good standing.

Graduate students in recreation must complete a minimum of 36 semester hours including a theory core, a research methodology core, and a research core. The research core is completed by fulfilling requirements for either the thesis or the non-thesis option.

The thesis option requires 3 semester hours of research methods, 3 semester hours of thesis, and 3 or 4 semester hours of statistics. After completing the required research methods course, each student should select a chairperson for the thesis committee. A minimum of two additional graduate faculty members, one holding rank outside the faculty of recreation, is needed to form the full committee. After approval of a thesis topic, the student will conduct a research effort under the committee's guidance, followed by an oral examination.

The non-thesis option requires 3 semester hours of research methods, 3 semester hours of individual research, and 3 or 4 semester hours of statistics. The research project or paper may be field-based or applied and will be supervised by an academic adviser who is a graduate faculty member in recreation. The research project or

paper must be approved by one additional graduate faculty member.

After completion of the core in either the thesis or non-thesis option, the student will select an additional 17 emphasis and elective hours. Students completing EPSY 506-4 will take a total of 8 credit hours of electives and students completing EPSY 402-3 will take a total of 9 credit hours of electives. By utilizing electives, the student can focus on a specific option or emphasis. This emphasis may include recreation administration, focusing on skills necessary for management of local, state, and federal recreation programs both in the public and commercial sector; outdoor recreation resource management which focuses on skills necessary to manage or administer programs, facilities and lands in the local, state, and federal park system; or therapeutic recreation which focuses on skills necessary in the management of public and private organizations which provide a diverse array of therapeutic recreation services (this emphasis could lead to certification). Variations of these include campus recreation management, expedition leadership and facility management.

A student must have a minimum 3.0 (4.0 point scale) grade point average to be eligible to graduate.

Master's Degree in Recreation

Thesis (Option 1)

Theory Core

REC 500-3 Modern Concepts of Leisure

REC 501-3 Personnel in Leisure Services

REC 508-3 Trends and Global Issues in Leisure Services

Research Methodology Core

REC 550-3 Research in Recreation

Research Core

EPSY 506-4 Inferential Statistics or EPSY 402-3 Basic Statistics

REC 599-3 Thesis

Non-Thesis (Option 2)Theory Core

REC 500-3 Modern Concepts of Leisure

REC 501-3 Personnel in Leisure Services

REC 508-3 Trends and Global Issues in Leisure Services

Research Methodology Core

REC 550-3 Research in Recreation

Research Core

EPSY 506-4 Inferential Statistics or EPSY 402-3 Basic Statistics

REC 575-3 Individual Research

Courses (REC)

Courses in this major may require the purchase of supplemental materials. Field trips are required for certain courses.

401-3 Fundamentals of Environmental Education.

(Same as Agriculture 401 and Forestry 401.) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: ten hours of biological science or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Agriculture 423 and Forestry 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Requires field trip transportation fee not to exceed \$40 per course registration. Prerequisite: ten hours biological science or ten hours of recreation.

425-3 Planning and Design of Recreational Facilities.

An examination of major design considerations for a variety of recreation facilities such as recreation centers, recreation sport complexes, parks, visitors centers, and natatoriums. Special attention will be given to long range facility planning. Prerequisite: 300, 301, 303, senior or graduate standing.

430-3 Outdoor Living Skills. Introduction to basic outdoor living skills in wilderness environments. Topics include basic camping skill, equipment and clothing selection and use, weather, health and sanitation, travel techniques, navigation, and decision making/problem solving. Utilizes the outdoor living core competency curriculum of the Wilderness Education Association. Trip fee not exceed \$350. May only be repeated once.

431-3 Expedition Leadership. Course focuses on professional leadership of highly adventurous wilderness trips. Emphasis is on development of sound judgment, decision-making, and teaching in wilderness expeditions. Three-to five-week expeditions in a wilderness setting. Trip fee not to exceed \$750. Outdoor Leader Certification by Wilderness Education Association is offered. Prerequisite: 331.

Certificate in Gerontology

The Department of Health Education and Recreation participates in the Certificate in Gerontology interdisciplinary program and offers a class, HED 440 Health Issues in Aging, which is a Certificate requirement. For more information on the Certificate program, please see the section on Certificate Programs in Chapter One.

440-15 (3,3,3,3,3) Therapeutic Recreation for Selected Populations. Students will examine problems and characteristics of individuals with various disabilities. Emphasis is upon the role of therapeutic recreation with these specific populations in institutional and community settings: (a) therapeutic recreation for individuals with psychological disorders, (b) therapeutic recreation for individuals with developmental disabilities, (c) therapeutic recreation for the aged, (d) therapeutic recreation for those in the criminal justice system, (e) therapeutic recreation for individuals with physical disabilities and (f) therapeutic recreation in substance abuse treatment. Prerequisite: 300, 301, 302, 304 or consent of instructor.

445-3 Outdoor Recreation Management. Philosophy and principles underlying the growth and development of outdoor recreation management. Outdoor recreation is examined in terms of historical values, long range planning, site design, visitor needs and environment impact. A laboratory cost of up to \$14 may be required. Restricted to Recreation majors. Prerequisite: 300, 302, 303 or consent of department.

446-3 Backcountry and Wilderness Trail Stewardship.

This course provides a hands-on approach to aspects of volunteer trail stewardship in planning, implementing, and evaluating basic and advanced trail features and building projects. Rules, regulations, and potential hazards associated with working, traveling, and camping in the backcountry will be addressed. Students will be exposed to trail building tools and proper usage and care. Field trips required. Consent of instructor required.

460-3 Therapeutic Recreation Management.

Organization and administration of therapeutic recreation programs in hospitals, nursing homes, schools for the retarded, detention centers, prisons and other institutions. Financial management and reimbursement issues are stressed. Prerequisite: 300, 302, 304 or consent of department.

461-3 Program Design and Evaluation for Therapeutic Recreation. To equip the student with skills necessary to systematically design and evaluate programs. Philosophy and nature of systems, system analysis, assessment, individual treatment planning, implementation and evaluation of treatment programs. Prerequisite: 300, 302,

304, one section of 440, concurrent enrollment in 380, or consent of department.

462-3 Facilitation Techniques in Therapeutic Recreation. This course is designed to provide an understanding of the basic processes and techniques of therapeutic recreation and to develop technical competencies necessary for the provision of quality therapeutic recreation services. Emphasis is on the skillful application of various processes and techniques to facilitate therapeutic changes in the client and the client's environment. Prerequisite: 304 or concurrent enrollment.

465-3 Advanced Administrative Techniques. Designed to examine current administrative topics in recreation such as practices and trends in budget and finance, legal aspects, grant writing, personnel practices and policies and others. Restricted to Recreation majors. Prerequisite: 365, 380.

475-3 to 39 (3 per topic) Recreation Workshop. Critical examination and analysis of innovative programs and practices in one of the following areas: (a) Budget and finance, (b) Campus recreation services, (c) Commercial, (d) Maintenance of areas and facilities, (e) Outdoor recreation. Field trip fee: \$100.00 (f) Personnel, (g) Technological advances, (h) Therapeutic recreation—aging, (i) Therapeutic recreation—developmental disability, (j) Therapeutic recreation—emotional illness, (k) Therapeutic recreation—physical disability, (l) Therapeutic recreation—prisons and detention centers, (m) Tourism.

485-2 to 12 Practicum in Outdoor Education. A supervised experience in a professional setting. Emphasis on administrative, supervisory, teaching and program leadership in outdoor, conservation, or environmental education setting. Costs for travel are the responsibility of the student. Prerequisite: consent of instructor.

500-3 Modern Concepts of Leisure. This course explores the meaning of leisure, recreation, and play from a philosophical and psychological perspective. The historical and contemporary relationships among work, time, lifestyles and leisure are analyzed. In addition, the course attempts to develop students' viewpoints toward these topics in order that they formulate a philosophy of leisure. Required of all majors.

501-3 Personnel in Leisure Services. This course will examine administrative issues regarding personnel in leisure delivery systems. Topics include: leadership theory, selection and training, legislation, collective bargaining, motivation, performance appraisal, power and gender. Prerequisite: 365.

502-3 Revenue Production for Leisure Service Organizations. An integrative view of revenue production for leisure service organizations. Numerous practices of generating income, such as fees and charges, facility rental, bonds, investments and public/private cooperative development will be examined in relationship to their ability to aid an organization in achieving its stated objectives. Prerequisite: 365.

503-3 Managing and Marketing Leisure Services. An examination of the critical functions of a manager in public

and private leisure service organizations. Particular topics include goal and policy development, ethics, risk management, fiscal management and facility operations. Special attention is given to the leisure service managers role in marketing recreation. Prerequisite: 365.

508-3 Trends and Global Issues in Leisure Services. This course will study the various issues and trends that affect leisure delivery systems. This course will be the culminating seminar for graduate students in Recreation. Prerequisite: 500, 501, 502, 550.

524-3 Professional Skills in Therapeutic Recreation. This course focuses on professional skills necessary at the administrative and supervisory level. Program and staff development, conference presentations, and inservice training, grantsmanship, article writing, budgeting, consultation and public relations comprise the core of the course. Prerequisite: 304, 460 or consent of department.

525-3 Recreation for Special Populations. Planning, organizing, selecting, evaluating, and adapting activities to a variety of institutional and community settings. Prerequisite: 500 or consent of department.

526-3 Seminar in Current Issues in Therapeutic Recreation. This course focuses on current issues in therapeutic recreation services including credentialing, accreditation, professional associations, legislation, research and other relevant issues. Prerequisite: 304 or consent of department.

550-3 Research in Recreation. Critical analysis of the most significant research studies in park and community, special populations, commercial and outdoor recreation. Prerequisite: 500.

560-9 (3 per topic) Seminar in Recreation. Major issues, trends, and cultural, economic and social significance in (a) Park and community, (b) Therapeutic recreation and individuals with disabilities, and (c) Commercial recreation. Prerequisite: 500 or consent of department.

565-3 Environmental Issues in Outdoor Recreation. Seminar in environmental issues and problems that affect outdoor recreation. Content includes history of the environmental movement in relation to outdoor recreation and specific problems affecting recreation on national parks, forest and wildlife refuges.

575-1 to 6 Individual Research. Selecting, investigating, and writing of a research topic under the personal supervision of a member of the department. Designed to help the student to develop ability to design, conduct, analyze and interpret research related to the problem of leisure. Not more than three hours may count toward Master's degree. Prerequisite: consent of instructor.

580-1 to 6 Readings in Leisure and Recreation. Readings in selected topics in leisure and recreation under staff supervision. Not more than three hours may count toward Master's degree. Prerequisite: consent of instructor.

596-1 to 6 Field Work in Recreation. Field work in an approved recreation department. Field work is in the student's field of interest. Supervision under approved agency officer in charge and a member of the department.

Prerequisite: major in recreation and permission of the department.

599-1 to 3 Thesis. Prerequisite: consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

REHABILITATION INSTITUTE

<http://rehab.siu.edu/>
rehab@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Austin, Gary F., Professor, *Emeritus*, Ph.D., Northwestern University, 1973; 1984.

Baker, Jonathan, Assistant Professor, Ph.D., Western Michigan University, 2009; 2009. Gerontology, behavior analysis, rehabilitation education.

Beck, Richard J., Associate Professor, Ph.D., University of Wisconsin, 1987; 1990. Chronic pain, substance abuse, workers' compensation, and cross-cultural counseling.

Benshoff, John J., Professor and *Director*, Ph.D., University of Northern Colorado, 1987; 1988. Rehabilitation Counseling.

Blache, Stephen E., Professor, *Emeritus*, Ph.D., The Ohio University - Athens, 1970; 1971.

Bordieri, James E., Professor, Ph.D., Illinois Institute of Technology, 1980; 1986. Vocational evaluation, rehabilitation administration, job placement, rehabilitation management.

Boyer, Valerie, Assistant Professor, Ph.D., SIUC, 2006; 2009. Child Language, animal-assisted therapy.

Brackett, Isaac P., Professor, *Emeritus*, Ph.D., Northwestern University, 1947; 1951.

Brutten, Gene J., Professor, *Emeritus*, Ph.D., University of Illinois, 1957; 1957.

Bryson, Seymour L., Professor, *Emeritus* Ph.D., Southern Illinois University Carbondale, 1972; 1969.

Crimando, William, Professor, Ph.D., Michigan State University, 1980; 1980. Job development and placement, computers in rehabilitation, adjustment services, staff training and development.

Cuvo, Anthony J., Professor, Ph.D., University of Connecticut, 1973; 1973. Behavior analysis and intervention in developmental disabilities, evaluation research, legal and ethical issues.

Davis, Paula K., Professor, Ph.D., Southern Illinois University Carbondale, 1989; 1995. Developmental disabilities, behavior analysis, transition from school to adult life.

Dixon, Mark, Professor, Ph.D., University of Nevada-Reno, 1998; 2000. Behavior analysis, behavior therapy and medicine, gambling, brain injury.

Falvo, Donna, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1978; 1974.

Flowers, Carl, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1993; 2002.

Franca, Maria Claudia, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2006; 2008. Voice science and multicultural issues related to communication disorders and sciences.

Greene, Brandon, Professor, Ph.D., Florida State University, 1979; 1979. Behavior analysis in consumer affairs; parent and staff training.

Heal, Nicole A., Assistant Professor, Ph.D., The University of Kansas, 2007; 2008. Applied behavior analysis in early childhood/special education, assessment and treatment of aberrant behaviors, preference assessments.

Hoshiko, Michael S., Professor, *Emeritus*, Ph.D., Purdue University, 1957; 1957.

Koch, D. Shane, Associate Professor, Ph.D., Southern Illinois University, 1999; 2005. Rehabilitation counseling, alcohol, drugs, and disability.

Lehr, Robert P., Jr., Professor, *Emeritus*, Ph.D., Baylor University, 1971; 1973.

Moncur, John P., Professor, *Emeritus*, Ph.D., Stanford University, 1950; 1972.

Poppen, Roger L., Professor, *Emeritus*, Ph.D., Stanford University, 1968; 1970.

Rehfeldt, Ruth Anne, Professor, Ph.D., University of Nevada-Reno, 1998; 2000. Autism, language acquisition and enhancement, supported employment, applied behavior analysis.

Renzaglia, Guy A., Professor, *Emeritus*, Ph.D., University of Minnesota, 1952; 1955.

Robertson, Stacia, Associate Professor, Ph.D., The Pennsylvania State University, 2003; 2004. Rehabilitation counseling, counseling psychology, diversity and rehabilitation, and vocational rehabilitation.

Rubin, Stanford E., Professor, *Emeritus*, Ed.D., University of Illinois, 1968; 1980.

Schultz, Martin C., Professor, *Emeritus*, Ph.D., University of Iowa, 1955; 1986.

Simpson, Kenneth O., Associate Professor, Ph.D., University of Nebraska-Lincoln, 1995; 1994. Alternative/augmentative communication, motor speech disorders.

Smith, Linda, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1994; 1994. Language development/language disorders in children, multicultural populations, assessment of language in children.

Taylor, Darrell, Associate Professor, Ph.D., University of South Florida, 1992; 1992. Vocational evaluation and work adjustment, cognate rehabilitation counseling.

Upton, Thomas, Associate Professor, Ph.D., The University of Iowa, 2000; 2000. Rehabilitation counseling, advances in rehabilitation, persons with brain injury, disability attitudes, and postsecondary educational accommodations.

Vieceli, Louis, Associate Professor, *Emeritus*, M.S.Ed., Southern Illinois University Carbondale, 1959; 1958.

Wright, W. Russell, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1974; 1971

In response to pressing human and social needs, the applied field of rehabilitation has solidly entrenched itself as a professional discipline. Multidisciplinary courses of study have been drawn together from the behavioral, social, and medical sciences appropriate to the development of competent practitioners, supervisors, and programmers in rehabilitation and welfare agencies. The overall program is left purposely broad and flexible to permit the inclusion of training innovations and emerging career patterns.

The Rehabilitation Institute offers graduate programs leading to the Philosophy degree and to the Master of Science degree with majors in behavior analysis and therapy, rehabilitation administration and services, and rehabilitation counseling.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in the Rehabilitation Institute. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

The Master's Degree Program

The master's degree programs in rehabilitation administration and services, behavior analysis and therapy are 45 semester hour programs and rehabilitation counseling is 48 semester hours. Candidates have the option of a research paper or a thesis. Candidates concentrating primarily on preparation for entry into the helping profession ordinarily opt to complete a research paper in their area of concentration. The thesis option typically requires a thesis of an experimental nature, a survey, or other form of research in which empirical data are collected and analyzed. Candidates must demonstrate their skills in formulating researchable questions or hypotheses, in identifying and/or manipulating relevant variables, and in the analysis and reporting of the results.

BEHAVIOR ANALYSIS AND THERAPY

The behavior analysis and therapy program is devoted to the empirically-based development and application of learning principles to a wide variety of human needs. Training is offered in behavioral practice, research and theory as it applies to problems such as child abuse and neglect, developmental disabilities, chronic medical conditions, and traumatic head injury.

Degree Requirements

In fulfilling the 45 semester hour requirement, the student must complete the required courses or their equivalent, at least two elective courses from those listed below, at least one 3-hour practicum, an internship, and either a research paper or thesis.

Required Courses

- REHB 503 Basic Behavior Analysis
- REHB 508 Complex Behavior Analysis

REHB 509a Behavior Analysis Research Designs: Single-Subject Designs

REHB 509b Behavior Analysis Research Designs: Group Designs

REHB 512 Legal and Ethical Issues in Behavior Analysis

REHB 535 Behavioral Observation Methods

REHB 574 Staff Training and Development

REHB 594b Practicum in Behavior Analysis and Therapy

Elective Courses

REHB 515 Behavioral Applications to Medical Problems

REHB 543 Child Behavior

REHB 545 Behavior Analysis in Developmental Disabilities

REHB 557a Self-Regulation of Behavior: Self-control

REHB 557b Self-Regulation of Behavior: Biofeedback

REHB 563 Behavioral Analysis: Community Applications

REHB 584 Seminar in Behavior Analysis and Therapy

REHB 589 Professional Seminar in Rehabilitation

Internship

The student must complete satisfactorily 9 hours of REHB 595 (Internship in Rehabilitation) under the supervision of a behavior analysis and therapy faculty member. The internship is typically begun following two semesters of course work.

Research Paper or Thesis

The student must complete satisfactorily 3 to 6 hours of REHB 593 (Research in Rehabilitation) or REHB 599 (Thesis) under the direction of a chairperson. The chairperson is a member of the behavior analysis and therapy faculty selected by mutual agreement between the student and the faculty member.

For the research paper, an additional graduate faculty member may be selected by mutual agreement between the student and the chairperson to serve as a reader. This is not required.

For the thesis, a second faculty member of the behavior analysis and therapy program will be selected by mutual agreement between the student and the chairperson to serve as thesis committee member. The committee will review the thesis prior to its initiation, as a prospectus, and after its completion, in an oral defense. At the oral defense, a third graduate faculty member, selected by mutual agreement between all parties, will be added to the committee to serve as a reader.

COMMUNICATION DISORDERS AND SCIENCES

The communication disorders and sciences program offers graduate work leading to the Master of Science degree. The program in communication disorders and sciences is designed to develop competence in the assessment and treatment of persons with communication disorders.

Course work is planned to meet the academic and professional requirements for state and national certification, which are required for professional employment. These

requirements comprise a minimum of 75 semester hours of course work, at least 30 semester hours of which must be at the graduate level. The M.S. degree program in speech-language pathology will culminate in eligibility for the Certificate of Clinical Competence of the American Speech-Language-Hearing Association and state licensure. ASHA certification is required for work in agencies, hospitals, medical centers, and higher education settings. In addition, students may take additional course work to qualify them for the Type 10 special certificate in speech and language impaired of the Illinois State Teacher Certification Board.

The program maintains many active research facilities which provide laboratories and specialized equipment for the study of both the normal and impaired functions of the speech, language, and hearing processes. The program maintains the SIUC Infant Cry laboratory and website.

Additional information regarding financial aid, programs, and application procedures can be secured by writing to: Communication Disorders and Sciences Program, Rehabilitation Institute, Southern Illinois University Carbondale, Carbondale, IL 62901-4609.

Master's Degree Program Leading to Certification in Speech Pathology

The master's degree requires a minimum of 30 semester hours of acceptable graduate credit (3.0 average), at least 15 semester hours of which are at the 500 level, and the completion of approximately 33 to 36 graduate semester hours in clinic courses, and an approved thesis or research project. The program for the M.S. degree is a five semester course of study of approximately 60 to 66 semester hours. Specific course requirements and total number of hours are generally determined by advisement after consultation with the graduate student.

Students are encouraged to follow one of the following plans:

THESIS PROGRAM: CERTIFICATION IN SPEECH PATHOLOGY

Core Courses (Required)

Speech--6

CDS 505-3 Phonological Development & Disorders

CDS 541-3 Neurogenics II

Language--6

CDS 507-3 Language Disorders

CDS 540-3 Neurogenics I

Speech or Language--9

CDS 438-3 Communication & Aging

Elective -3 hours

3 hours from: CDS 408, 417, 418, 428, 460, 485, 510, 512, 517, 544, 548, 590

Speech, Language or Hearing--3

Elective- 3 hours

3 hours from: CDS 408, 417, 418, 428, 431, 450, 460, 485, 503, 510, 512, 517, 521, 525, 526, 528, 530, 533, 536, 544, 548, 550, 590

Courses selected must show a balance across professional fields of competency and interest.

Clinical Courses: 33 hours

CDS 594-3 (A), 594-3 (B), 594-2 (C)

CDS 598-12 Internship in Speech-Language Pathology & Audiology

CDS 598-12 Internship in Speech-Language Pathology & Audiology

(or CDS 597-12 Public School Practicum)

CDS 596-1, Hearing Diagnostics

Research Tools: 6 hours

CDS 500 Research Design in Speech Pathology & Audiology

3 hours statistics or research design

Note: 3 hours instrumentation course such as CDS544-3 (above), or CDS 521

Thesis: 3 hours

3 hours from CDS 599

Total: 66 hours

Thesis students wishing ASHA Certification must also show on their undergraduate or graduate transcripts:

6 additional credits in professional course work (language disorders, speech and hearing diagnostics);

27 credits in basic science course work (a mathematics, biology or physiology, sociology, science, anatomy and physiology of speech, speech science, phonetics, voice or articulation, multicultural aspects of communication);

12 credits in science or professional course work (3 credit courses in audiological diagnostics, audiological rehabilitation, psychology, an introduction to communication disorders).

Thesis students wishing Illinois Type-10 certification must also show on their undergraduate or graduate transcripts the following additional credits:

9 credits in communication skills (6 written, 3 oral)

3 credits mathematics

3 credits science with laboratory

3 credits history (American)

3 credits language structure (linguistics/English)

3 credits third world culture or non-western civilization

6 credits history, literature, philosophy or fine arts

3 credits government (American)

2 credits health and/or physical development

2 credits EDUC 314-A Human Growth, Devel & Learn

3 credits EDUC 315-3 Organization/Directing Instruction

3 credits EDUC 311-2 School and Society

3 credits EDUC 308-3 C-M Teaching Exceptional Children

3 credits EDUC 310-2 Study of Teaching

CDS 597-12 Public School Practicum

CDS 598-12 Clinical Internship (200 hours minimum)

NON-THESIS PROGRAM: CERTIFICATION IN SPEECH PATHOLOGYCore Courses (Required)**Spec--6**

CDS 505-3 Phonological Development & Disorders

CDS 541-3 Neurogenics II

Language--6

CDS 507-3 Language Disorders

CDS 540-3 Neurogenics I

Speech or Language--9

CDS 438-3 Communication & Ageing

Elective: 3 hours

3 hours from: CDS 408, 417, 418, 428, 460, 485,
510, 512, 517, 544, 548, 590**Speech, Language or Hearing--3**

Elective: 6-8 hours

3 hours from: CDS 408, 417, 418, 428, 431, 450,
460, 485, 503, 510, 512, 517, 521, 525, 526, 528,
530, 533, 536, 544, 548, 550, 590Courses selected must show a balance across
professional fields of competency and interest.Clinical Courses: 33 hours

CDS 594-3 (A), 594-3 (B), 594-2 (C)

CDS 598-12 Internship in Speech-Language Pathology
& AudiologyCDS 598-12 Internship in Speech-Language Pathology
& Audiology

(or CDS 597-12 Public School Practicum)

CDS 596-1, Hearing Diagnostics

Research Tools: 3 hoursCDS 500 Research Design in Speech Pathology & Audi
ologyNote: a 3 hours instrumentation course such as CDS
544-3 (above), or CDS 521Research Paper: 3 hours

1 to 3 hours from CDS 593

Total: 66 hoursNon-thesis students wishing ASHA Certification must also
show on their undergraduate or graduate transcripts:6 additional credits in professional course work (language
disorders, speech and hearing diagnostics);27 credits in basic science course work (a mathematics,
biology or physiology, sociology, science, anatomy and
physiology of speech, speech science, phonetics, voice
or articulation, multicultural aspects of communication);12 credits in science or professional course work (3 credit
courses in audiological diagnostics, audiological rehabilita-
tion, psychology, an introduction to communication disor-
ders).Non-thesis students wishing Illinois Type-10 certification
must also show on their undergraduate or graduate tran-
scripts the following additional credits:

9 credits in communication skills (6 written, 3 oral)

3 credits mathematics

3 credits science with laboratory

3 credits history (American)

3 credits language structure (linguistics/English)

3 credits third world culture or non-western civilization

6 credits history, literature, philosophy or fine arts

3 credits government (American)

2 credits health and/or physical development

2 credits EDUC 314-A Human Growth, Devel & Learn

3 credits EDUC 315-3 Organization/Directing Instruction

3 credits EDUC 311-2 School and Society

3 credits EDUC 308-3 C-M Teaching Exceptional Children

3 credits EDUC 310-2 Study of Teaching

CDS 597-12 Public School Practicum

CDS 598-12 Clinical Internship (200 hours minimum)

In addition to the academic programs detailed above, ASHA certification in speech pathology requires a minimum of 350 clock hours of supervised clinical experience in a combination of settings. Within these settings, there are requirements for types of disorders as well as ages of the population. These requirements are met by assignment to the university clinical center, off-site school practicums and off-site medical practicums. Students will average approximately 50 clock hours per semester in the university clinic and 100 hours in each of the off-site practicums. The actual semester hours of credit for the typical student will vary due to client load but approximately 33 semester hours of credit total (i.e., 3 semesters in the university clinic for 9 semester hours of credit total, and 12 semester hours for each of the two semesters off-site). It should be emphasized that it is the clock hours accumulated that is important in the clinical area and it may be necessary to exceed the 33 semester hours of clinical experience in order to obtain the necessary clock hours for certification. The total program for the M.S. degree meeting the ASHA certification requirements is usually a five semester program of approximately 66 semester hours of credit. Additional time may be required for the thesis program student, or if the student has not met the necessary prerequisites for graduate courses.

The College of Education and Human Services is entitled to certify students for the public schools; the Communication Disorders and Sciences Program of the Rehabilitation Institute is entitled to certify students for the American Speech Language Hearing Association. A comprehensive examination is required by the Graduate School for non-thesis programs. This requirement is met by the successful passing of the NTE ASHA Examination given at regular times during the year.

Courses (CDS)

408-3 Communicative Disorders: Craniofacial Anomalies. Development of cleft palate and related anomalies that cause communication disorders. Assessment and intervention of the communication disorders related to these impairments. Prerequisite: Coursework on the normal structure and function of the speech and hearing mechanism.

410-3 Multicultural Aspects of Communication Disorders. Students will explore different cultures and communication within these cultures. Emphasis will be placed on the relationship between cultural differences and communication disorders. Review of speech and language disorders in multicultural populations, as well as assessment and intervention strategies for use with this diverse group will be provided. Prerequisite: 302, 303 or consent of instructor.

419-3 Communication Problems of the Hearing Impaired. Objectives and techniques for the teaching of lip reading, speech conservation, and auditory training. Prerequisite: 302, 303 and 420 or equivalents and consent of instructor.

420-3 Introduction to Audiological Disorders and Evaluation. Bases of professional field of audiology (orientation, anatomy and physiology of the auditory system), major disease processes influencing hearing and their manifestations, measurement of hearing loss. Prerequisite: 203 and 214.

450-3 Neuroanatomical Basis of Human Communication. Examination of the central nervous system (brain and spinal cord) as it relates to normal and disordered human communication. Presentation of basic neuroanatomy, common neuropathologies relevant to communication disorders, and strategies in neurogenic problem solving. Prerequisite: 314 or consent of instructor.

460-3 Augmentative and Alternative Communication Systems. An introduction to alternative and augmentative communication systems for non-vocal clients. Discussions include: use of aided and unaided augmentative systems, assessment procedures and training. Prerequisite: 301 or consent of instructor.

485-1 to 9 (1 to 3 per section) Special Topics in Communication Disorders and Sciences. Topical presentations of current information on special interests of the faculty not otherwise covered in the curriculum. Designed to promote better understanding of recent developments related to disorders of verbal communication. Open to advanced undergraduate and graduate students with consent of instructor. The student may take only one section per 700 numbers.

491-1 to 9 (1 to 3 per semester) Individual Study. Activities involved shall be investigative, creative, or clinical in character. Must be arranged in advance with the instructor, with consent of the chair. Prerequisite: consent of chair.

492-3 Diagnostic Procedures in Communication Disorders. A course devoted to discussion of the role of the speech and hearing clinician as a differential diagnostician. Special emphasis is placed on correlating information ob-

tained from the oral-peripheral examination, articulation and language evaluation, audiometric and case history information in constructing the initial evaluation report. Prerequisite: consent of instructor.

493-3 Basic Clinical Practice. Current information regarding diagnostic, treatment and documentation procedures in speech-language pathology will be presented through active observation in the clinical environment and classroom instruction. Prerequisite: consent of instructor.

500-3 Research Design in Speech Pathology and Audiology. Evaluation of the strategies and procedural tactics of behavioral research.

505-3 Phonological Acquisition. An introductory discussion of the important linguistic, physiological and acoustic variables which affect language production at the segmental and supra-segmental level of language; and an historical examination of the growth and development of distinctive feature systems from 1920 to the present. Concentration upon the mathematical, logical, physiological and acoustic assumptions of the various matrices, which have been developed. Prerequisite: 302 or equivalent and consent of instructor.

507-3 Language Disorders. Discussion of the application of current theoretical implications and research findings to the syntactically impaired. This course emphasizes diagnostic and therapeutic models applicable to language disorders. Opportunities for research and clinical experience with young children displaying developmental language problems will be provided. Required for Master's students. Prerequisite: 303 or consent of instructor.

510-3 Stuttering: Behavior Assessment and Therapy. Explores the assumptions underlying diagnosis and assessment. Procedures specific to the differential assessment of fluency failures are examined, evaluated and related to therapeutic strategies and the tactics of behavior change. Prerequisite: consent of instructor.

512-3 Voice Disorders. An intensive study of the variables of air stream modulation resulting from impaired structures and function of head and neck. Prerequisite: 318 or equivalent and consent of instructor.

517-3 Seminar: Language Disorders Birth to Three. In this course we will identify a typical physical growth, cognitive and motor functions and other areas of development that affect communication in children ages 0 to three years. It will also infuse cultural awareness, and provide information on working with families, peer professionals, processes of teaming, referral and collaboration. Prerequisite: 303 or equivalent or consent of instructor.

518-3 Problems of Communication and the Process of Aging. Review problems of communication related to the aging process and examine relevant diagnostic and therapeutic techniques.

519-3 Medical Speech-Language Pathology and Augmentative Communication. Disorders of communication that often occur in medical settings, including those related to traumatic brain injury and laryngectomy. Also focuses on

persons with severe communication impairment and augmentative/alternative communication as a broad category of intervention procedures for this client population.

533-3 to 6 (3,3) Seminar: Speech and Auditory Perception. Special problems in hearing and communication science. Students may choose from a wide range of topics: speech acoustic, kinesthetic and vibrotactile perception, voiceprint identification, synthetic and compressed speech, digital speech, electro stimulation of hearing, and neurophysiological basis for perception. One or more topics are pursued in depth. The seminar may be repeated for a total of six hours with different content. Prerequisite: consent of instructor.

540-3 Neurogenic Disorders of Communication I. Focus on aphasia and neurolinguistic science. A clinically oriented presentation of the aphasias, and related CNS language disturbances, will be integrated with an introduction to the broader field of neurolinguistics. Clinical aspects will focus on assessment of rehabilitation approaches in aphasia and related disorders. Other topics include cortical language representation, hemispheric functions (general), and review of basic neurolinguistic literature. Prerequisite: 450 or consent of instructor.

541-3 Neurogenic Disorders of Communication II. Focus on the role of the pyramidal and extrapyramidal motor systems in speech production and speech disorders related to abnormalities in these motor systems. Discussion of the neurological basis and clinical management of the dysarthrias and verbal apraxia. Prerequisite: 540 or consent of instructor.

544-1 to 6 Seminar: Computer Techniques for Phonological Disorders in Children. A laboratory based examination of the distinctive features used by children in the normal and abnormal acquisition of phonology. Discussions and practical projects are developed to further the student's understanding of current assumptions concerning the acoustical aspects of abnormal phonation and speech sound production. Group projects are developed using computer based speech sound digitizing equipment. Course credit is based upon the time involved and the complexity of the topic. Digital software and laboratory examination topics are varied to meet individual student needs. May be repeated as topics vary to a total of 6 hours.

550-1 to 15 Professional Training Seminar. A special seminar that provides doctoral students the opportunity to prepare and present papers on various aspects of speech-language pathology and audiology. Liberal discussion will follow each paper. All doctoral students are required to enroll for one credit each semester until admitted to candidacy. Graded *S/U* only. Only four credit hours are counted toward the Ph.D. degree.

590-1 to 4 (1 to 2, 1 to 2) Readings in Speech-Language Pathology and Audiology. Supervised and directed readings in specific areas of speech pathology and in audiology. Maximum of two hours counted toward Master's degree. Prerequisite: consent of chair.

593-1 to 3 Research Problems in Speech-Language Pathology and Audiology. Individual work upon selected problems for research. Prerequisite: consent of chair.

594-1 to 18 (1 to 3 per semester) Advanced Clinical Practice Therapy/SLP. Active, supervised participation in the clinical process with emphasis on individualized assessment, treatment, counseling and documentation procedures. Overview of clinical practice in various settings, federal legislation and standards of ethical practice. Prerequisite: consent of instructor required.

595-1 to 18 (1 to 3 per semester) Advanced Clinical Practice: Diagnostic/SLP. Advanced clinical practicum in speech and language diagnosis. Populations of children and adults will be evaluated. Emphasis will be placed on diagnostic techniques used in evaluation, as well as preparation of evaluation reports. Prerequisite: CDS majors only and consent of instructor.

596-1 Advanced Clinical Practice: Hearing Diagnostics. Advanced clinical practice in hearing diagnostics. Emphasis will be placed on diagnostic techniques used in the preparation of basic and advanced audiological reports. Graded *S/U* only. Prerequisite: consent of instructor.

597-12 Public School Practicum. Public School internship provides the student with clinical experience under the supervision of a school-based certified speech-language pathologist. The student should receive experience with the disorders of fluency, articulation, voice, organics, language and hearing. The student should also gain administrative experience. Lab Fee: \$100. Prerequisite: 150 to 200 clock hours and consent of instructor.

598-6 to 12 Internship Communication Disorders. Internship in a selected medical center, hospital clinic, community agency, or private clinic. The internship provides the student with an intensive, professional, clinical experience under supervision of qualified and certified resident staff members. Prerequisite: consent of instructor.

599-1 to 6 Thesis.

600-1 to 32 (1 to 16 per semester) Dissertation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

REHABILITATION ADMINISTRATION AND SERVICES

Students receive their degrees in Rehabilitation Administration and Services. Preference in admissions to the Administration concentration will be given to applicants having no fewer than 3 years of approved, acceptable rehabilitation or related work experience. All students must complete a minimum of 33 semester hours of graduate course work, which includes a research paper or thesis. Students applying for RA&S admission, but not meeting the professional experience criterion, may be considered for admission. If admitted, students will be required to complete a full-time internship (6 semester hours). During the first semester of full-time study, or a comparable time for part time students, the student must have a plan of study approved by the advisor and program coordinator. This plan of study normally includes rehabilitation administration core and professional course work, although specific plans may differ for students with varying backgrounds and career goals.

The Rehabilitation Administration requirements are as follows:

Rehabilitation Core (21 hours)

REHB 513-3 to 4 Medical and Psychosocial Aspects of Disability

REHB 593-6 Research in Rehabilitation

or

REHB 593-3 Research in Rehabilitation

and

REHB 599-3 Thesis

Rehabilitation Administration Concentration (24 hours)

REHB 570-3 Rehabilitation Administration

REHB 573-3 Programming, Budgeting, and Community Resources

REHB 576-3 Development and Supervision of Rehabilitation Employees

REHB 578-3 Program Evaluation in Rehabilitation

REHB 579-3 Advanced Fiscal Management in Rehabilitation

REHB 580-3 Professional and Community Relations in Rehabilitation

REHB 581-3 Professional Issues in Rehabilitation

REHB 582-3 Seminar in Rehabilitation Services

Rehabilitation Services Concentration

Students may opt for the Services program sequence (10 semester hours), as part of their Plan of Study. The Rehabilitation Services sequence includes:

REHB 521-3 Vocational Development and Placement

REHB 530-3 Assessment Procedures

REHB 575-4 Case Management

and

REHB 595-6 Internship in Rehabilitation

These may be taken in lieu of REHB 573, REHB 578, and REHB 579

Practicum and Internship Requirements

Practicum and internships are not required for students admitted to the program with 3 years of approved, acceptable rehabilitation or related work experience. Students with minimal or no rehabilitation related work experiences will be expected to complete the required 6 semester hours of field experience.

Requirements for Research Paper or Thesis and Comprehensive Examination

All students are required to complete a scholarly research paper or thesis in a rehabilitation-related area and an oral comprehensive examination. The student completing a graduate thesis must orally defend it before a thesis committee.

REHABILITATION COUNSELING

Rehabilitation counseling is a process which assists individuals with disabilities to cope constructively with their disability, to maximize their abilities, and to enhance their quality of life physically, psychologically, socially, and vocationally. Through training, professional rehabilitation counselors obtain skills in counseling, evaluation, career exploration, job development and placement, and case management.

The focus of the rehabilitation counselor training program is to prepare professional rehabilitation counselors with the knowledge, skills, and attitudes needed to enter the field. During the training program, students acquire counseling skills, knowledge and understanding of medical and psychological impact of chronic illness and disability on all areas of the individual's life including vocational and independent living issues, as well as skills related to assessment and evaluation, and an understanding of the legislative, historical, and philosophical background of rehabilitation. Student's professional development is encouraged through participation in professional rehabilitation counseling organizations.

The rehabilitation counselor training program is fully accredited by the Council on Rehabilitation Education (CORE). Graduates of the program are eligible to sit for the CRC (Certified Rehabilitation Counselor) examination, a national examination administered by the Commission on Rehabilitation Counselor Certification (CRCC).

General Requirements

The course of study within the rehabilitation counselor training program consists of a minimum of 48 semester hours and involves a blend of academic and clinical experiences. Students in the Rehabilitation Counseling Program must complete 42 hours after admission to the Rehabilitation Counseling Program. Students may transfer a maximum of 6 credit hours of credit taken prior to admission to the program to their 48 hour requirement if the

course work is appropriate to Rehabilitation Counseling. Under no circumstances may previous work experience serve as equivalency for any credit hours or clinical practicum or internship experience. In addition to course work, students must complete one semester of practicum, one semester of internship, and a thesis, research paper, or research class in Rehabilitation. Before graduation students must also pass a comprehensive examination.

The required program of study is:

REHB 400 Introduction to Rehabilitation

REHB 521 Vocational Development and Placement

REHB 501 Introduction to Interpersonal Skills Development in Rehabilitation Counseling

REHB 513 Medical and Psychosocial Aspects of Disability

REHB 530 Assessment Procedures in Rehabilitation Counseling

REHB 551 Rehabilitation Counseling: Theory and Practice

REHB 575 Case Management in Rehabilitation Counseling

REHB 589 Professional Seminar in Rehabilitation

REHB 593 Research in Rehabilitation

or

REHB 593-A Research in Rehabilitation Counseling

or

REHB 599 Thesis

REHB 594c Practicum in Rehabilitation Counseling

REHB 595 Internship in Rehabilitation

Practicum and Internship Requirements

Students in the Rehabilitation Counseling program are required to complete a total of four semester credit hours of practicum in Rehabilitation Counseling. All practicum and internship sites must be pre-approved by Rehabilitation Counseling faculty. Practicum involves the student's participation eight hours per week for 16 weeks at the practicum site. The majority of the student's time in practicum must be spent in direct client counseling. Counseling sessions must be audio or video taped or have provision for direct supervision by the student's supervisor, such as through a two way mirror. Students in practicum are required to meet with their faculty supervisor once per week during the 16 weeks of practicum in order to review tapes of counseling sessions. Rehabilitation Counseling students are also required to complete a total of eight semester credit hours of internship in Rehabilitation Counseling. Prerequisite to internship is successful completion of the Rehabilitation Counseling practicum. General Rehabilitation Counseling internship requirements include an internship of 40 hours per week for 16 weeks or 20 hours per week for 32 weeks at a site approved by the Rehabilitation Counseling faculty, and one hour per week of supervision, preferably by a Certified Rehabilitation Counselor. During internship at least 50% of the student's responsibilities must include direct experience in individual and/or group counseling of persons with emotional, social, behavioral or physical disability.

Students are also given the opportunity within their program of study to take electives. In addition to the required course of study for rehabilitation counseling, students may

choose to specialize in a particular area by taking additional elective courses. Examples of possibilities of specialization are listed below.

Studies in Substance Abuse

A special sequence of courses is offered within the rehabilitation counselor training program for students interested in working with individuals who have substance abuse problems. Students are required to complete a specific sequence of courses and an internship in a substance abuse treatment setting in addition to the courses required for the master's degree in rehabilitation counseling. Successful completion of this course sequence and field work enables students to sit for the Substance Abuse Counselor Certification Examination in Illinois. Graduate students from other disciplines in the University are eligible to enroll in these courses to complete substance abuse counselor certification requirements. The required courses are:

REHB 461: Introduction to Alcoholism & Substance Abuse

REHB 471: Rehabilitation and Treatment of Alcohol and Drug Abusers

REHB 558: Rehabilitation of Special Alcohol and Drug Abusing Populations

REHB 566: Alcoholism, Drug Abuse and the Family

Studies in Substance Abuse with Rehabilitation Counselor Training Program is accredited by the Illinois Alcohol and Other Drug Abuse Certification Association, Inc. (IAODAPCA)

Certificate in Addiction Studies

The Post-Baccalaureate Certificate in Addiction Studies, housed in the Rehabilitation Counselor Training Program in the Rehabilitation Institute, is open to graduate students interested in developing proficiency in addiction treatment and in certification as a drug and alcohol counselor. Students must complete 20 credits of required coursework including an academic discipline-based 500 hour internship (8 credits). Didactic courses include REHB 461, 471, 558, and 566. For more information contact: D. Shane Koch, Ph.D., CRC, Rehabilitation Counselor Training Program, Rehn Hall-Mail Code 4609 Southern Illinois University Carbondale, 1025 Lincoln Drive, Carbondale, IL 62901-4609, Telephone: 453-8263, Email: dkoch@siu.edu.

Studies in Aging

This area of special study offered within the Rehabilitation Institute includes a sequence of three elective courses in aging in addition to those courses required for the general rehabilitation counseling curriculum, and an internship in an agency or facility which serves older adults. Students in other disciplines within the University are eligible to enroll in any of the three courses in aging, however only rehabilitation students will be eligible for the internship.

DOCTOR OF PHILOSOPHY DEGREE PROGRAM

The doctoral program in rehabilitation prepares students to function effectively as rehabilitation educators, researchers,

or administrators. It does this by fostering the student's development and acquisition of relevant conceptual and experiential skills in evaluation and research methodologies, in rehabilitation service, in rehabilitation education practices, or in the management of service units.

Admission and Retention Standards

All applicable policies and procedures of the Graduate School with regard to the admission of doctoral students will be followed. Requirements for admission to the doctoral program in rehabilitation exceed those of the Graduate School. The admissions committee of the doctoral program will review all candidates carefully for their special strengths. The following will be considered for all candidates.

1. High academic achievement (normally indicated by a grade point average of 3.5 on a 4-point scale) in a master's program in rehabilitation or a closely related field at an accredited university.
2. Interest in conducting rehabilitation research.
3. Two years of successful performance equivalent to full-time paid employment (post-baccalaureate) in a rehabilitation or related professional position. This may include an approved internship experience at the master's level.
4. At least three letters of recommendation by professional persons familiar with the applicant's performance in academic, research, or service work settings.
5. GRE scores dating back no farther than 5 years.

Applicants will be considered for acceptance into the doctoral program at the beginning of either the fall or spring semester. Courses in which a grade below *B* is obtained will not be counted toward satisfying the hour requirements for the degree.

Doctoral Committee

The student shall select a chair who will serve as his/her major adviser. In consultation with the chair the student shall select a doctoral committee which is approved by the coordinator of doctoral studies and the Graduate School. At least one member shall be external to the Rehabilitation Institute.

Working together with the chair, the student shall develop a plan of study, designating the courses to be completed. This plan shall be approved by the student's doctoral committee and by the coordinator of doctoral studies and then shall be made a matter of record. Further, the doctoral committee shall serve as the student's dissertation committee.

Admission to Candidacy

Admission to candidacy is granted by the dean of the Graduate School upon the recommendation of the faculty responsible for the student's program after the student has fulfilled the Graduate School residency requirement for the doctoral degree and passed the preliminary examinations.

The written preliminary examinations are designed to assess the breadth and depth of the student's knowledge. They are prepared, administered, and evaluated by Rehabilitation Institute faculty committees appointed by the coordinator of doctoral studies. The preliminary examinations will ordinarily be taken in the fall of the second year of doctoral study.

Dissertation

After admission to candidacy, the student will prepare a dissertation based on original research conducted under the direct supervision of the dissertation chair and committee. The requirements of the Graduate School will govern the formation of the dissertation committee and the preparation and defense of the dissertation. While the dissertation is in preparation, the student will register for no fewer than 24 semester hours in REHB 600, Dissertation. The dissertation should conform to the current edition of the *Publication Manual of the American Psychological Association* and the standards required by the Graduate School.

Degree Requirements

The doctoral program emphasizes mastery of skills in research methodology, knowledge of medical and psychosocial aspects of disability, and knowledge of public policy on disability, as well as competency in the area of rehabilitation counseling, rehabilitation administration, behavior analysis and therapy, or communication disorders and sciences. The course of study requires a minimum of 96 post-baccalaureate semester hours, 24 of which are dissertation hours and 39 of which are fulfilled by required courses. All remaining coursework taken by the student will be electives, selected with the approval of the student's doctoral committee.

Required Courses

The student must have successfully completed the following courses no later than 24 months after entering the doctoral program:

EPSY 506-4 Inferential Statistics
EPSY 507-4 Multiple Regression

Program of Study

Each area of concentration (BAT, CDS, RAS, and RCT) has a specific program of study. While each area of concentration requires the same number of credits of: a) Research Development & Utilization (20 credits) and b) Professional Issues & Methods in Rehabilitation (12 credits), the specific required and elective courses available within these areas may vary.

Nine semester hours in REHB 592: Professional Supervision in Rehabilitation (teaching or research) must also be successfully completed during the student's tenure in the doctoral program.

The student's preparation at the master's level will be evaluated and up to 30 hours of didactic course work may be accepted toward the completion of the 96 hour minimum requirement for the doctorate. Graduate level didactic

courses in rehabilitation counseling, rehabilitation services, rehabilitation administration, behavior analysis and therapy, and communication disorders and sciences will usually be acceptable. Course work in related areas such as counseling, psychology, and social work may qualify.

The goal of the program is to develop high quality professionals. Thus, the student must demonstrate competence in the areas of rehabilitation services offered by the Rehabilitation Institute. This is accomplished through the student's master's degree program, previous work experience, the required courses, supervised professional ex-

periences, and electives. Ph.D. degree graduates should be well prepared for leadership roles in the areas of rehabilitation administration, service, education, or research.

Certificate in Gerontology

The Rehabilitation Institute participates in the Certificate in Gerontology interdisciplinary program and offers a class, REHB 405 Introduction to Aging and Rehabilitation, which is a Certificate requirement. For more information on the Certificate program, please see Certificate Programs in Chapter One of the Catalog.

Courses (REHB)

Courses in this unit may require the purchase of supplemental materials not to exceed \$10 per course. Field trips are required for certain courses.

400-3 Introduction to Rehabilitation. An introduction to the broad field of rehabilitation, to include the processes (services), facilities and personnel involved. Note: students can enroll in the didactic portion for two credits, or three credits if they elect the field trips. No student can take the field trips alone without taking the didactic portion as well.

401-3 Disability, Diversity and Society. This course will address the relationship between prevailing societal attitudes and environmental designs and the opportunity of persons with disabilities to participate fully in society. It will examine the physical, mental, gender and cultural characteristics of persons with disabilities as determinants of their needs, values, aspirations and opportunities. How public policies can promote or limit inclusion and equal opportunities for persons with disabilities will also be addressed.

403-3 Independent Living Rehabilitation. Survey of principles and methods of independent living for persons with disabilities with attention to client assessment for rehabilitation, effective techniques for specific individuals with disabilities, and the variety of types and organization of independent living programs.

405-3 Introduction to Aging and Rehabilitation. Introduction to the field of aging. Includes social, political, economic and legal issues pertinent to an aging society and rehabilitation.

406-3 Introduction to Behavior Analysis and Therapy. A survey of the principles and procedures in behavior analysis and therapy and the scope of its application to human needs and problems.

419-1 to 3 Cross-Cultural Rehabilitation. (Same as Black American Studies 490.) Major focus on the relationship/comparison of basic cultural, economic and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.

445-3 to 12 Rehabilitation Services with Special Populations. Procedures and programs pertinent to the care and treatment of special populations. Three semester cred-

its will ordinarily be granted for each unit. Prerequisite: consent of instructor.

(a)-9 (3, 3, 3) Alcohol and Drug Abuse.

(b)-9 (3, 3, 3) Psychiatric Rehabilitation.

(c)-9 (3, 3, 3) Juvenile Offender.

(d)-9 (3, 3, 3) Mental Retardation.

(e)-9 (3, 3, 3) Physically Disabled.

(f)-9 (3, 3, 3) Public Offender.

(g)-9 (3, 3, 3) Sensory Disabled.

(h)-9 (3, 3, 3) Developmental Disabilities.

446-3 Psychosocial Aspects of Aging. Selected theories of psychosocial aspects of aging will be presented and the psychological and sociological processes of aging with the ensuing changes will be related to these conceptual frameworks. Included for discussion and related to field experience will be such concerns as stress reactions to retirement, physical disabilities, impact of reduced economic resources, and other personal-social changes in aging. Topics will address the knowledge base needed by students concerned with rehabilitation of aging clients in institutional, community and home settings. Therapeutic techniques to ameliorate these stresses will be an integral part of the course.

447-3 Biomedical Aspect of Aging. The aging process in a life-span developmental perspective; biological theories of aging, physiological changes in middle and old age and their effects on behavior, performance potential, and psychosocial functioning; senility and other age-related disabilities, their prevention and management; geriatric health maintenance and rehabilitation; institutionalization; death and dying. No prerequisites.

452-3 Individual Service Planning. This course provides students with the skills to develop individual service plans for individuals being served in community rehabilitation programs. Topics covered include person-centered assessment, functional community based training, and written treatment plans. Prerequisite: 406 and 445h or consent of instructor.

453-1 to 4 Personal and Family Life Styling. The academic and personal competencies that are characteristic of fully-functioning, integrated persons within the context of

our twentieth century environment will be systematically reviewed for adoption in every day living as well as in professional functions. Participants will focus on and experience life styling theories, models, and skills for their own growth and development and learn to assess basic risk-factors in their rehabilitation clients and families prior to helping them program a more balanced, synergistic, and holistic approach to living. Prerequisite: consent of instructor.

461-3 Introduction to Alcoholism and Drug Abuse. Orientation and introduction to a variety of topics related to alcohol and drug abuse; surveys history, theories of cause and development, consequences of abuse, classes and types of drugs, legislation and other current issues relating to substance abuse and addiction.

468-3 Sexuality and Disability. Research and rehabilitation practices pertaining to the unique psychosexual aspects of various chronically disabling conditions will be examined.

471-3 Rehabilitation and Treatment of the Alcohol and Drug Abusers. A comprehensive examination of substance abuse treatment and rehabilitation; focus on various treatment approaches, treatment settings, and types of counseling to include an overview of individual, group and family techniques; the rehabilitation counselor's role is addressed and necessary skills in treating drug and alcohol abusers. Prerequisite: 461 or consent of instructor.

479-3 Technical Writing in Rehabilitation. Fundamentals of writing skills for rehabilitation specialists, including preparation and drafting of program/grant proposals, vocational evaluation/work adjustment reports, news releases and other publicity materials. Prerequisite: consent of instructor.

490-1 to 6 (1 to 3 per semester) Readings in Rehabilitation. Supervised readings in selected areas. Prerequisite: consent of instructor.

493-3 Clinical Evaluation. This course will provide students with the skills necessary to act as critical consumers of rehabilitation-related research. It will also provide students with the analytical skills necessary to apply the logic of research methodology to their work with consumers. The relationship between the scientific process and rehabilitation services will be emphasized throughout the course, including an introduction to research on program evaluation. Also emphasized will be the critique and interpretation of published research, as well as the writing competencies required for a student to successfully prepare a literature review paper. Prerequisite: simultaneous enrollment in or prior completion of 406.

494-1 to 12 Work Experience in Rehabilitation. Credit granted for work experience in rehabilitation. Rehabilitation 494 and 594 both cannot be counted for a graduate degree, only one or the other can satisfy requirements toward a Master's degree. Graded *S/U*. Prerequisite: consent of department.

501-3 Introduction to Interpersonal Skills Development in Rehabilitation Counseling. Focuses upon facilitative interpersonal communication skills necessary in Rehabilitation

Counseling Practice. The course provides theory and practice in facilitative interpersonal communication in counseling, behavior therapy and administration services. Included is pre-practicum orientation. Prerequisite: consent of instructor.

503-3 Basic Behavior Analysis. Philosophy, terminology, and basic methodology of experimental and applied behavior analysis. Focuses on a variety of operant and respondent conditioning procedures for shaping new behaviors and modifying established behaviors. Prerequisite: consent of instructor.

504-3 Foundations of Rehabilitation Research. This course includes: the logic of scientific inquiry; the concepts of research questions and hypotheses; the notion of variables; the relationship among theoretical constructs, operationalism, and measurement instrument reliability and validity; the concepts of control, internal validity and casual inference; sampling methods and external validity; and experimental and descriptive research. Prerequisite: enrollment in Rh.D. degree program or consent.

505-3 Behavioral Gerontology. This course examines the application of behavioral principles to problems associated with aging such as deficits in the activities of daily living and social skills, wandering, aggression, incontinence, depression and anxiety, and dementia among others. Environmental redesign and alternative performance strategies will also be addressed. Behavioral training and supervision of staff members who work with older individuals is also presented.

507-3 Behavior Consultation and Management. Focus on the behavior analysis techniques needed for use in organizational and consultation settings. The fundamentals for developing effective consulting relationships are presented. Skills for becoming a behavior analytic consultant in clinical settings such as schools, developmental disability facilities, and managed care environments are presented. Additional behavior analytic consultant skills will be taught for effective practice of organizational behavior management in business and industry settings. Prerequisite: 503.

508-3 Complex Behavior Analysis. Experimental analysis of procedures that result in acquisition, maintenance, and attenuation of complex individual and social behavior. Prerequisite: consent of instructor.

509-6 (3,3) Behavior Analysis Research Designs. Focuses on behavior analysis research design and methodology. Three semester hours will be granted for each unit. (a) Single subject experimental designs; (b) Group experimental designs. Prerequisite: consent of instructor.

511-3 Functional Analysis and Interventions – Autism. This course will survey research on the assessment and treatment of challenging behavior for individuals with autism. Defining characteristic, procedural variations, and strengths and limitations of the three general approaches to functional assessment will be reviewed. In addition, emphasis will be placed on strategies for using functional assessment information in the design of interventions to re-

duce challenging behavior. Prerequisite: 503 or consent of instructor.

512-3 Legal and Ethical Issues in Behavior Analysis. Focuses on federal and state legislation, litigation, policies, guidelines, and other forms of legal and ethical control of the professional practice of behavior analysis and therapy. Implications for research and service will be discussed. Prerequisite: consent of instructor.

513-1 to 4 Medical and Psycho-Social Aspects of Disability. A review of the impact of disease and trauma on the human system with special attention on the effects physical limitations and socio-emotional correlates have on human functioning and the rehabilitation process. Prerequisite: consent of department.

515-3 Behavioral Applications to Medical Problems. Examines the use of behavior change procedures and applied behavior analysis in the treatment and rehabilitation of medically related problems such as obesity, alcoholism, headaches, hypertension and cerebral palsy; also, compliance to medical regimens, e.g., diabetes, dental hygiene, exercise; and promotes the utilization of health facilities and community health programs. Issues in training medical personnel to disseminate behavior change programs are also covered. Prerequisite: 503 or consent of instructor.

519-(1-3) Cross-Cultural Rehabilitation. Major focus on the relationship/comparison of basic cultural economic, and psychosocial processes relative to the rehabilitation of people in contemporary societies. Prerequisite: consent of instructor.

520-(3) Clinical Supervision in Rehabilitation Seminar. This course is designed to prepare doctoral and advanced graduate students with an overview of theory, research, and methods of clinical supervision in Rehabilitation. Prerequisite: consent of instructor.

521-3 Vocational Development and Placement. Relates the psychosocial meaning of work, process of vocational development, theories of occupational choice and labor market trends to current and innovative methods of job development, selective placement and follow-up with individuals with disability. Prerequisite: consent of instructor.

530-3 Assessment Procedures in Rehabilitation Counseling. Review of fundamental bases of measurement, criteria for evaluating tests, exposure to representative instruments in major categories, and use of test and work samples in assessing the functioning abilities and work potential of individuals with disabilities to seek and hold gainful employment. Prerequisite: consent of instructor.

531-3 Individual Assessment Procedures in Rehabilitation. Thorough familiarization and practice with independent assessment devices used in program selection and job placement of individuals with various handicaps. Prerequisite: 431 and consent of instructor.

533-3 Vocational Appraisal. An extensive exposure to instruments designed for use with vocational rehabilitation clients. Administration and interpretation of a wide variety of instruments used to gain information to be used in planning for vocational development. Both didactic and experi-

ential to include consideration of information obtained from interviews, tests, and other diagnostic techniques. Prerequisite: consent of instructor.

535-3 Behavioral Observation Methods. Behavioral targeting, observational recording techniques, and issues of validity and reliability of measurement relevant to rehabilitation will be examined. Prerequisite: previous or concurrent enrollment in either 409, 452, or 503 or consent of instructor.

543-3 Child Behavior. A systematic analysis of child behavior. Included is an examination of popular books on child rearing. Emphasizes approaches for remediation of behavior disorders. Prerequisite: consent of instructor.

545-3 Behavior Analysis in Developmental Disabilities. Consideration of behavioral principles as applied in the development of responsive behavior in persons with developmental disabilities. Prerequisite: consent of instructor.

550-3 Assistive Technology. This course reviews applications of assistive technology (AT) used by people with disabilities. The course covers various type of AT ranging from low to high technology. Additionally, the course explores devices that are commercially available and those that are customized. Strategies for modifying tasks rather than using technology are reviewed.

551-4 Rehabilitation Counseling: Theory and Practice. A didactic and experiential analysis of the underlying theory and techniques of individual and group counseling of individuals with disabilities. Prerequisite: consent of instructor.

557A-3 Self-Regulation of Behavior: Self-Control. The course provides a thorough review of self-control techniques and their application to habit disorders such as smoking, eating, exercise, time-management and nervous habits. Prerequisite: consent of instructor.

557B-3 Self-Regulation of Behavior: Biofeedback. The course provides a comprehensive review of experimental and clinical studies of biofeedback. It concentrates on stress related disorders and provides supervised laboratory experience A \$10 laboratory fee is charged. Prerequisite: consent of instructor.

558-3 Rehabilitation of Special Alcoholic and Drug Abusing Populations. Emphasis is on the characteristics, assessment, rehabilitation, and unique problems of drug and alcohol abusers within specific populations. Particular attention is given to substance abuse of women, minorities, elderly, adolescents, homosexuals and disabled. Prerequisite: 461 or consent of instructor.

560-3 Private Sector Rehabilitation. A comprehensive introduction to many of the unique characteristics of rehabilitation services offered within the private-for-profit sector which can be applied by practitioners on a national basis.

563-3 Behavioral Analysis: Community Applications. All aspects of behavior analysis applications in the community are examined including historical development, the "state of the art", practical issues and obstacles to conducting behavioral analysis/community research; future trends and directions. Prerequisite: 503 or consent of instructor.

566-3 Alcoholism, Drug Abuse and the Family. The family system model is emphasized as a rehabilitation pro-

cedure for drug and alcohol abuse. Examines etiology of drug and alcohol abuse, assessment procedures, treatment and rehabilitation, and associated problems such as spouse or child abuse, divorce, and incest from a family context. Prevention techniques are additionally covered. Prerequisite: 461 or consent of instructor.

567-3 Behavioral Theories of Addiction. Focus on the behavior analysis techniques needed for use in the diagnosis and treatment of various addictions. The fundamentals of scientific behavioral research in addiction are presented along with current effective treatment strategies that promote behavior change. Skills will be developed for becoming a behavior analytic addiction researcher or treatment provider in clinical settings serving persons with gambling and other addictions.

569-3 Lifespan Issues in Autism. The goal of this course is to review and examine a wide variety of issues related to autism. Topics are explored from multiple perspectives in order to gain insight into the unique needs of individuals with autism across the lifespan. The course provides opportunities to analyze current knowledge about autism and identify profitable directions through which professionals can improve existing approaches and influence care provision. Prerequisite: consent of instructor.

570-3 Rehabilitation Administration. Problem solving approach to current issues in organizational structure and management functions in public and voluntary rehabilitation agencies, decision making, leadership, program development and evaluation.

571-3 Advanced Disability Seminar. Specifically, this seminar reviews the historical and philosophical bases of rehabilitation counselor roles and functions; disability models; rehabilitation service delivery models; vocational rehabilitation and career theorists; serving underserved persons, and facilitating acceptance of varying disabilities of those we serve. Prerequisite: Doctoral student or consent of instructor.

573-3 Programming, Budgeting, and Community Resources. Designed to prepare the student to develop and operate comprehensive or specialized rehabilitation programs with special attention to resource development, fiscal management, and community and public relations. Prerequisite: 570 or consent of instructor.

574-3 Staff Training and Development. This course prepares the student to design, implement, and supervise an institutional program to train staff in methods of direct service to the institution's clients. Each student will actually design and submit a program through simulation. Lecture/workshop format.

575-4 Case Management in Rehabilitation Counseling. Basic procedures in providing and coordinating available human services based on individual need in the context of a professional-client relationship, and the basics of recording and reporting such services. Prerequisite: consent of instructor.

576-2 to 3 Development and Supervision of Rehabilitation Employees. Current and progressive supervisory practices in rehabilitation with emphasis on employee de-

velopment through in-service training, periodic evaluation and related methods. Prerequisite: consent of instructor.

577-3 Philosophy of Science Issues in Rehabilitation. This course will explore the central questions in the philosophy of science as they pertain to the field of rehabilitation, including, but not limited to demarcation criterion, science vs. pseudoscience, scientific revolutions, inductive vs. deductive logic and theory building, and moral, cognitive, and contextual values in science. The issues will be explored within the context of research and theory in rehabilitation.

578-3 Program Evaluation in Rehabilitation. An analysis of the development and utilization of a program evaluation system in rehabilitation settings with focus given to system design, monitoring techniques and service program development. Students will be trained in the advanced practice of program evaluation techniques and their application to rehabilitation settings. Prerequisite: consent of instructor.

579-3 Advanced Fiscal Management in Rehabilitation. Application of fund and functional accounting in rehabilitation to include fiscal reporting and record keeping, fiscal planning and management in rehabilitation. Prerequisite: 570 and 573.

580-3 Professional and Community Relations in Rehabilitation. Examination of the linkages and needs of rehabilitation programs and agencies in the area of community and professional relations, with special reference to the role of administrator. Application of marketing principles to the management of external relations in rehabilitation settings. Prerequisite: consent of instructor.

581-3 Professional Issues in Rehabilitation. Focus is on legal and ethical issues and issues related to legislative and public policy formulation. Implications for rehabilitation programs, practice and research are emphasized.

582-3 Seminar in Rehabilitation Services. Special consideration of factors in the organization and management of rehabilitation services. Prerequisite: consent of instructor.

583-1 to 4 Seminar in Work Evaluation. Select attention to procedures/models for assessing work readiness of personnel with disabilities. Prerequisite: consent of instructor.

584-1 to 6 (1 to 3 per semester) Seminar in Behavior Analysis and Therapy. Special topics and new developments in modifying human behavior. Prerequisite: consent of instructor.

585-1 to 4 Seminar in Counseling/Coordination Services. Consideration of special issues in counseling and delivery of services. Prerequisite: consent of instructor. (a) Guided Imagery (b) Group Counseling in Rehabilitation.

586-3 Seminar in Job Development and Placement. Consideration of special issues in job development and placement philosophy, techniques and research concerning individuals with disabilities. Prerequisite: consent of instructor.

587-3 Seminar in Correlates of Disability. A systematic analysis of the behavioral socio-cultural implication of disabling conditions. Emphasizes the rehabilitation process in

remediation of debilitating conditions. Prerequisite: 513 or consent of instructor.

588-3 Seminar in Research in Rehabilitation. Advanced seminar focusing upon specialized and advanced topics in research in rehabilitation. This course is designed to prepare doctoral students in rehabilitation with the special tools needed to carry out doctoral dissertation and other advanced research projects. Prerequisite: consent of instructor.

589-1 to 18 (1 per semester) Professional Seminar in Rehabilitation. The course involves advanced level presentations focusing on current research, applied practices, and innovations in rehabilitation. Presentations are made by faculty, graduate students and guest experts. A minimum of four semester hours required for Doctor of Rehabilitation degree.

590-3 Coexisting Disabilities: Alcohol, Drugs, and Disability. An intensive analysis of the impact of alcohol and other drug abuse (AODA) on the lives of persons with disabilities. Additional focus of the impact of AODA on case management and the rehabilitation service delivery system. Restricted to: Doctoral students in rehabilitation or consent of instructor.

591-1 to 18 Independent Projects in Rehabilitation. Systematic readings and development of individual projects in pertinent rehabilitation areas. No more than six hours may be counted toward the Master's degree. Prerequisite: consent of instructor.

592-1 to 16 Professional Supervision in Rehabilitation. Experience provided in the supervision of research, teaching, and rehabilitation services. No more than four hours may be taken in any semester. Prerequisite: Doctoral student in rehabilitation and consent of instructor.

593-1 to 18 Research in Rehabilitation. Systematic investigation of factors and procedures relevant to rehabilitation. No more than six hours may be counted toward the Master's degree. Prerequisite: consent of instructor.

593A-1 to 18 Research in Rehabilitation. Systematic investigation of factors and procedures relevant to rehabilitation. No more than six hours may be counted toward the master's degree. (a) Counseling. To facilitate knowledge/skill acquisition for the rehabilitation professional in becoming a knowledgeable consumer of rehabilitation research. To facilitate the completion of the Master's project. Prerequisite: consent of instructor.

594-1 to 12 Practicum in Rehabilitation. Supervised experiences in agencies in rehabilitation. (a) Administration. Rehabilitation facilities management/supervision, in planning, programming and evaluation. (b) (Same as Psychology 596.) Behavior analysis and therapy. Application of behavioral analysis/methods in human treatment and in management. (c) Counseling. Development of counseling skills with individuals and groups to include work related functions. Prerequisite: (a,b,c) admission to the specific degree program; (c) 501, 551, and 589.

595-1 to 12 Internship in Rehabilitation. (a) Extended practice in rehabilitation settings cooperatively guided and supervised by agency staff and university faculty. Graded *S/U* only. Prerequisite: appropriate degree specific practicum and consent of department. (b) Counseling. Development of advanced counseling skills with individuals with disability and other work-related functions. Graded *S/U* only. Prerequisite: 594c.

599-1 to 6 Thesis. Prerequisite: consent of instructor.

600-1 to 30 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Rehabilitation degree. Prerequisite: doctoral candidate in rehabilitation.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

SOCIAL WORK

<http://socialwork.siu.edu/>
mmmjw@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICE

Graduate Faculty:

Buila, Sarah, Assistant Professor, *Undergraduate Program Director*, M.S.W. SIUC 1993; 1998. Ph.D., University of Illinois. Social work research methods, statistics, interviewing skills, generalist practice, substance abuse, psycho-social disorders, health/mental health practice, social support and the management of chronic mental illness, mental illness in childhood, health care policy and international social welfare.

Dreuth Zeman, Laura, Professor, Ph.D., Vanderbilt University, 1996, 1998. Health and mental health policy and program evaluation focusing on delivery systems, payment models, school climate, and social work education; clinical practice with families, women and children recovering from addiction, trauma or mood disorders.

Jurkowski, Elaine T., Professor and *Graduate Program Director*, Ph.D., University of Illinois at Chicago, 1997; 1998. Social work theory, abnormal psychology, children with special needs, community social services and systems changes, research methods, health, public health, community planning/counseling, human services and gerontology.

Kawewe, Saliwe, Professor, Ph.D., Saint Louis University, 1985; 1996. Advanced generalist practice, policy, research, international social welfare policy, social development strategies in Third World communities, HIV/AIDS prevention and treatment, women and children, cultural diversity, and indigenous populations.

Miah, Mizanur R., Professor and *Director*, Ph.D. Southern Illinois University Carbondale, 1985; 1985. Research methodology, evaluation research, human behavior and

the social environment, AIDS/rural health, fertility and infant/child mortality, child/youth and family welfare, international social development, and social service issues for Asian-Americans.

Mukherjee, Dhrubodhi, Assistant Professor, Ph.D., University of South Carolina, 2005; 2005. Social network analysis, gerontology and social connectedness, social capital, volunteerism and civic participation, international social development, use of technology in social work practice.

Paris, Wayne, Assistant Professor, M.S.W. Oklahoma University, 1979; 2004. Ph.D., University of Huddersfield, Huddersfield, Yorkshire, United Kingdom. Primary research interests are psychosocial issues associated with medical treatment for chronic medical conditions, substance abuse assessment and treatment outcomes, and clinical intervention outcomes.

Reese, Dona J., Associate Professor, Ph.D., University of Maryland, 1994; 2008.

Reichert, Elisabeth, Professor, Ph.D., University of Tennessee at Knoxville, 1989; 1994. Practice, policy, human behavior and the social environment, clinical social work with sexual abuse/incest survivors, battered women, crisis intervention.

Soliman, Hussein, Professor, Ph.D. University of Tennessee, 1993; 2004. Research methodology, generalist practice, practice evaluation, school social work, social policy, disasters and traumatic stress, international social work.

The School of Social Work offers graduate work leading to the Master of Social Work degree. The M.S.W. program is fully accredited by the Council on Social Work Education.

Master of Social Work

The Master of Social Work degree program offers preparation for professional social work practice. The organizing principle of the M.S.W. program is the improvement of the quality of individual life through the enhancement of social and economic justice and opportunity. Upon completion of the M.S.W. program, the student will have acquired knowledge, values, and skills consistent with the social work profession and be capable ultimately of engaging in autonomous social work practice. Graduates will be able to effectively deliver the social services needed to meet human needs in both urban and rural areas.

Admission Requirements

To be considered for admission to the regular two-year M.S.W. program applicants must:

1. Meet all admission requirements set forth by the Graduate School.
2. Have a GPA of at least 3.0 (on a 4.0 scale) in the last two years of undergraduate course work.
3. Show evidence of a broad liberal arts base with substantial preparation in the social and behavioral science and humanities.
4. Demonstrate content in human biology and introductory statistics.
5. International students must have a TOEFL score of 550 (paper); 213 (computer); 80 (internet) or above. The IELTS exam is also acceptable (a minimum score of 6.0)

Note: A standardized test score, such as the GRE, is not required for admission, however, students applying for a graduate assistantship will be required to have an official GRE score on file in the School of Social Work.

Entry is in the fall semester for the regular two-year program.

To be considered for admission to the advanced standing M.S.W. program applicants must:

1. Have a B.S.W. degree from an accredited social work program.
2. Meet all requirements listed for the regular two-year program.

Entry is in the summer semester for the advanced standing program.

Application material may be obtained from:
www.siu.edu/~socwork OR

M.S.W. Admission's Office
School of Social Work, mail code 4329
Southern Illinois University Carbondale
Carbondale, Illinois 62901-4329

The deadline for applications is February 1 for the advanced standing program and March 15 for the regular two-year program. Applicants who complete their undergraduate degree requirements by December and have all application material submitted to the School of Social Work by October 1 may be considered for early

Degree Requirements

Students admitted to the regular two-year program are required to complete the first year foundation curriculum and the second year advanced curriculum. They are required to complete a minimum of 60 semester hours of

Fall (15 semester hours)

SOCW 500-3 Human Behavior in the Social Environment
SOCW 501-3 Generalist Practice
SOCW 510-3 Generalist Systems Theory
SOCW 541A-2 Foundation Seminar I
SOCW 541B-2 Foundation Practicum I
Elective 2

Students admitted to the advanced standing program are required to complete nine semester hours of transition courses, with a grade of B or better in each course, and a

Summer (9 semester hours)

SOCW 502-3 Perspectives on Human Behavior and Social Environment
SOCW 512-3 Research Design/Theory Building
SOCW 522-3 Social Welfare Policy Development and Analysis

The second year curriculum is organized around the following areas of emphasis: health/mental health; and children, youth and families. The school also offers course

admission and may take electives prior to entry into the summer or fall cohort.

Applicants admitted for either the regular two-year program or for advanced standing may be required to take additional courses as a condition of admission. Documented potential for the profession of social work is considered a part of the admission criteria, which may also include an interview prior to acceptance.

Each application will be individually reviewed; however, meeting all stated criteria will not automatically guarantee admission to the school.

The deadline for applications is February 1 for the advanced standing program and March 15 for the regular two-year program.

Applicants must apply both to the Graduate School and the School of Social Work. However, all application materials should be sent directly to the School of Social Work. Students accepted into the M.S.W. program must register for the semester they are admitted.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Social Work. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

graduate course work taken in the approved sequence. The foundation curriculum consists of 30 semester hours and includes the following courses:

Spring (15 semester hours)

SOCW 504-2 Ethnic Diversity and Social Service
SOCW 511-3 Social Work Research
SOCW 521-3 Social Welfare Policy
SOCW 542A-2 Foundation Seminar II
SOCW 542B-2 Foundation Practicum II
Elective-3

minimum of 30 semester hours in the second year graduate course curriculum in the approved sequence. The transition courses include the following:

work in preparation for School Social Work Type 73 Certification by the Illinois State Board of Education. Applicants must indicate their preference of area of

emphasis. Although we attempt to accommodate each applicant's first preference, we do not guarantee students

will receive their first choice. The second year curriculum includes the following courses in each area of emphasis:

Health/Mental Health

Fall (15 semester hours)

SOCW 531-3 Psychological Disorders
SOCW 543-A-3 Advanced Practicum Seminar I
SOCW 543-B 3 Advanced Practicum I
SOCW 551-3 H/MH Practice I
SOCW 555-3 Advanced Policy Analysis: H/MH

Spring (15 semester hours)

SOCW 532-3 Evaluation Research
SOCW 544A-3-Advanced Practicum Seminar II
SOCW 544B-3 Advanced Practicum II
SOCW 552-3 H/MH Practice II
Elective-3

Children, Youth and Families

Fall (15 semester hours)

SOCW 531-2 Psychological Disorders
SOCW 543-A-3 Advanced Practicum Seminar I
SOCW 543-B 3 Advanced Practicum I
SOCW 561-3 CY&F Practice
SOCW 565-3 Advance Policy Analysis: CY&F

Spring (15 semester hours)

SOCW 532-3 Evaluation Research
SOCW 544A-3-Advanced Practicum Seminar II
SOCW 544B-3 Advanced Practicum II
SOCW 562-3 CY&F Practice II
Elective-3

Certification in School Social Work

Those students who wish to qualify for certification in school social work need to:

- A. Complete the core courses listed above under the children, youth, and families emphasis.
- B. Take the following courses (which will satisfy the elective requirements):
 1. SOCW 533-2 Social Work Practice in the School
SOCW 567-2 Seminar in School Social Work
 2. SPED 408-3 or SPED 420-3

And

EAHE 501-3 or EAHE 503-3 (A waiver may be available with permission of the School of Social Work)
- C. The field placement (SOCW 543B-3 and SOCW 544B-3) will be in a school setting for two consecutive semesters.
- D. SPED 408-3 or SPED 420-3 is a prerequisite to field placement for students in the School Social Work Certification Program and must be completed before fall semester field placement (SOCW 543).
- E. Pass the Illinois State Board of Education Basic Skills Test and the School Social Work Certification Test.

In each year of study, in addition to classroom work, students are required to take field practicum. Applied learning through field practice is an integral component of social work education. Field instruction provides the student with the opportunity for applying social work theory and conceptual learning to realistic and practical situations. Students may not substitute current or past, paid or volunteer, social work experience for the field practicum

requirements of the M.S.W. program. While the school takes into account the student's career goals in the

selection of the field practicum assignment, we do not guarantee that students will receive their first preference of field assignment.

M.S.W. students must maintain an overall G.P.A. of 3.0 (on a 4.0 scale).

Within limits imposed by the policies of the Graduate School of the University, transfer credits will be permitted for up to 30 semester hours for applicants who wish to transfer from another accredited graduate program in social work.

Student Advisement

Upon admission to the Master of Social Work degree program, the student will be assigned a faculty adviser. The adviser is responsible for supervision of the student's progress and is available for career counseling as well as assisting in other matters which might arise in connection with the student's work.

Financial Aid

The program offers limited financial assistance through graduate assistantships. Other scholarships, grants-in-aid, etc., may be applied for through the Graduate School, Southern Illinois University Carbondale, Carbondale, IL 62901-4716.

M.S.W./J.D. in Social Work and Law

A concurrent degree in social work and law is designed to educate practitioners in law and social work to effectively utilize the problem-solving strategies and techniques of

both professions. Students prepared in this program will develop an understanding of the ethics, language, research, history, and processes of both professions. Individuals so trained will be uniquely prepared for careers which combine both legal and human service needs such as administration, supervision of the provision of services, legal aspects of services, public policy leadership roles, family practice and community planning and development. Accepted students could complete a concurrent program in as few as three years with full-time summer attendance. Students must meet the requirements of admission and be admitted separately to the School of Social Work and the School of Law. Students currently enrolled in social work or law programs must have a minimum GPA before they may enroll in the concurrent program. The minimum GPA for social work is 3.0 and for law is 2.5. Social work students interested in this program should consult with the School of Social Work Graduate Program Director.

Courses (SOCW)

478-(1 to 6) International Social Work: Generalist Policy and Practice. (a) Germany; (b) Mexico; (c) India; (d) Bangladesh; (e) Canada; (f) South America; (g) Asia; (h) Africa; (i) Classroom based; (j) other. Provides an international perspective for the study of social work groups, organizations and communities. Focuses on the examination of assessment and problem solving interventions and cross-cultural comparisons of policy and practice.

496-1 to 3 Independent Research in Social Work. Provides opportunity for students to conduct independent research with the guidance of a faculty member. Topics of research are identified by the student and faculty member. Prerequisite: consent of instructor and school director.

500-3 Human Behavior in the Social Environment. Life span development. Students acquire a foundation knowledge of human development in the social environment over the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is emphasized. Prerequisite: admission to the program.

501-3 Generalist Practice. This course emphasizes the development of advanced intervention skills related to generalist practice with individuals, families, groups, organizations and communities in multiple-service, community-based agencies characteristic of rural areas. Includes mandatory interviewing skills weekend. Prerequisite: admission to the program.

502-3 Perspectives on Human Behavior and Social Environment. Selective examination of the theoretical basis of development and inter-relational aspects of individuals and families throughout the life span. Normal development stages and impacts of social systems on the growth of individuals in diverse populations of rural areas is

Certificate in Conflict Resolution

The School of Social Work participates in the interdisciplinary Graduate Certificate in Conflict Resolution. The Department offers SOCW 496, SOCW 504, and SOCW 546 as courses that can fulfill program requirements in required and elective areas. For more information on the Certificate program, please see the section Certificate Programs in Chapter One of the Catalog.

Certificate in Gerontology

The School of Social Work participates in the Certificate in Gerontology interdisciplinary program and offers a class, SOCW 575 Policy and Program Issues of Aging, which is a Certificate requirement. For more information on the Certificate program, please see the section Certificate Programs in Chapter One of the Catalog.

emphasized. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 512 and 522. Grade of *B* or better is required.

504-2 Ethnic Diversity and Social Service. Examination of issues involved in delivering social services to various ethnic and cultural groups. Sensitizes students to personal, familial, or community problems of ethnic or cultural origin. Implications for understanding social services to populations who have experienced discrimination are discussed. Prerequisite: admission to the program.

505-2 Foundations of Social Work and Services. Examination of both historical and philosophical developments of the social welfare system as an institution and social work as a profession in the United States. Future trends in social work education and practice are predicted based on social and political mentality prevailing at present time. Prerequisite: admission to program.

510-3 Families, Groups and Organizational Systems. Examination of systems and advanced generalist practice theories within the context of rural, integrated and multiple-service social services delivery systems. Specific practice examples will be used to facilitate understanding of how theory guides practice with families, groups, organizations and communities. Prerequisite: admission to the program.

511-3 Social Work Research. This course emphasizes the importance of scientific inquiry within social work practice and covers the application of basic concepts of research methodology to social work including problem formulation, research design, sampling, measurement, and data analysis. Includes single-system methodology as it applies to social work practice in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies.

Prerequisite: admission to the program and an introduction to statistics course.

512-3 Research Design/Theory Building. Selective examination of inductive and deductive methods in social work knowledge building. Includes research methodologies and group designs as applied to social work practices in rural areas. Prepares students to conduct an individualized single-system project based on practice intervention with clients or systems in their practicum setting in the final semester of their studies. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 502 and 522. Grade of *B* or better is required to continue in the advanced standing program.

520-3 Social Work Practice II. Foundation practice focusing on process, methods, and skills for work with groups, communities, and organizations. Prerequisite: 510.

521-3 Social Welfare Policy. Examines the historical development of social welfare and professional social work in Europe and the United States. The course introduces a systematic framework for policy analysis with particular attention paid to policies affecting diverse rural populations, women and minorities. Prerequisite: admission to the program, restricted to social work graduate students only.

522-3 Social Welfare Policy Development and Analysis. Selective examination of the historical development of social welfare and professional social work in Europe and the United States. Uses a systematic framework for policy analysis with particular attention paid to policies affecting women, low income, oppressed and diverse rural populations. Prerequisite: eligibility for advanced standing. Must be taken concurrently with 502 and 512. Grade of *B* or better is required to continue in the advanced standing program.

530-3 Substance Abuse and Social Work Practice. In-depth knowledge of social work assessment of both individuals and families involved in substance abuse. Students are provided with advanced knowledge and skills in various social work intervention models applicable to the area of substance abuse.

531-3 Psychosocial Disorders. (Same as SOCW 446J) This course provides a basic knowledge of psychopathology and how it impacts individual functioning and family dynamics. Students become familiar with the theoretical basis and the basic structure of DSM-IV and models of interdisciplinary clinical practice in mental health. Prerequisite: Completion of foundation or transition courses (SOCW502, 512, 522 or SOCW500, 501, 510, 541a&b, 542a&b) or consent from the School's Graduate Program Director.

532-3 Evaluation Research. This course focuses on the application of research methods especially in evaluating programs or program components in the area of concentration and to the practicum experience. Includes content on self-evaluation in practice. Prerequisite: 542 and an introduction to statistics course.

533-2 Social Work Practice in the Schools. In-depth examination of the history and practice of social work in primary and secondary schools. Roles of school social workers and practice approaches are emphasized. Prerequisite: completion of foundation or transition courses, SPED 408 or SPED 420, and admission to the School of Social Work certification program.

535-3 Legal Aspects of Social Work Practice. Examination of law and legal procedures that relate directly to social work practice in general. Legal perspectives of a specific concentration field of practice are discussed in depth.

541A-2 Foundation Seminar I. Seminar which is taken concurrently with Foundation Practicum I. The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Prerequisite: admission to the program.

541B-2 Foundation Practicum I. Field practicum which is taken concurrently with Foundation Seminar I and is a structured and supervised on-site field practice in a selected agency. Practicum is equivalent to 12 hours per week for 15 weeks (a total of 360 hours) over two semesters. Graded S/U. Prerequisite: admission to the program and concurrent registration in 541a.

542A-4 Foundation Seminar II. Seminar which is taken concurrently with Foundation Practicum II and serves as a continuation of 541a. The seminar emphasizes the relationship between the practicum experience, social work practice, policy, human behavior and the social environment (HBSE) and research curricula. Prerequisite: 541a,b.

542B-2 Foundation Practicum II. Field practicum which is taken concurrently with Foundation Seminar II and serves as a continuation of 541b, which is a structured and supervised on-site field practice in a selected agency with concurrent seminar. This is the second on-site field practice with concurrent seminar. Continuation of 541b. Graded S/U. Prerequisite: 541a,b and concurrent registration in 542a.

543A-3 Advanced Practicum Seminar I. Concentration specific practicum seminar with concurrent field practicum, 543b. Practicum seminar focuses on the application of advanced generalist theory, knowledge and skills covered in the curriculum within the specific concentration area (Children, Youth and Families/School Social Work; Health/Mental Health). Prerequisite: completion of foundation or transition courses.

543B-3 Advanced Practicum I. On-site concentration specific field practice in an approved agency with appropriate supervision equivalent to 20 hours per week for 15 weeks (a total of 607 hours is required to be completed in two semesters) with a concurrent seminar. The practicum focuses on the application of advanced concentration theory, knowledge and skills covered in the

curriculum. Graded *S/U*. Prerequisite: completion of foundation or transition courses.

544A-3 Advanced Practicum Seminar II. A continuation of the concentration specific practicum seminar with field practicum 544b. Continuation of 543a. Prerequisite: 543 a&b and registration in SOCW544b.

544B-3 Advanced Practicum II. A continuation of the concentration specific practicum of 20 hours per week in the field for 15 weeks with a concurrent seminar 544a. Graded *S/U*. Continuation of 543b. Prerequisite: SOCW 543 a&b and concurrent registration in 544a.

546-3 to 33 Selected Topics. (Same as SOCW 446.) Selected Topics (may be repeated with different sections) a. Social work counseling with individuals; b. Social work practice with groups; c. Social work intervention with traumatic stress events; d. Medical social work; e. Substance abuse and mental health; f. Social work family therapy; g. Administration and grant writing; h. Child welfare; i. Spirituality; j. Adoption; k. Other.

550-2 Social Work Practice in Health and Mental Health Settings. Examination of social and emotional impacts of illness and death on individuals. Implications of physical and mental disorders to social work practice are discussed with particular emphasis on cultural, racial, religious, gender and other psychosocial aspects of illness. Prerequisite: completion of foundation or transition courses or consent of the school.

551-3 Health and Mental Health Practice I. This is the first of a two-part course that emphasizes health and mental health delivery within systems theory and an advanced generalist practice skills framework. Includes case studies and exercise aimed at practice with diverse populations in rural areas. Prerequisite: completion of foundation or transition courses.

552-3 Health and Mental Practice II. The second part of the practice course on advanced skills in health and mental health. Continuation of 551. Application of treatment modalities. Prerequisite: 543 & 551.

555-3 Advanced Policy Analysis: Health and Mental Health. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting health and mental health in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation or transition courses.

557-3 Community Mental Health and the African-American. Introduction to clinical techniques useful for facilitating community functions and changes within the context of the African-American experience. An exploration of the culture of the African-American community builds the basis for community mental health service strategies.

558-3 Women and Community Mental Health. Examination of mental health problems of American women and exploration of effective interventive strategies.

Emphasis on rural mental health services for low-income women.

559-3 Aging and Mental Health. Examination of the nature and etiology of mental health problems facing older Americans. Review of research reports to build a theoretical basis for mental disorders.

560-2 Social Work Practice with Children and Youth. Advanced level of knowledge and skills that are relevant to the prevention and amelioration of problems related to maladaptive parent-child interaction, parental inability to provide child care, parents' unrealistic expectations of a physically and mentally limited child. Prerequisite: completion of foundation or transition courses or consent of the school.

561-3 Children, Youth and Families Practice I. This is the first part of a two-part course that emphasizes family-centered practice (family preservation, integrated services) within systems theory and an advanced generalist practice skills framework. Includes case studies and exercises aimed at practice with diverse populations in rural areas. Prerequisite: completion of foundation or transition courses.

562-3 Children, Youth and Families Practice II. The second part of the practice course on advanced skills. Continuation of 561. Application of treatment modalities. Prerequisite: 543 & 561.

565-3 Advanced Policy Analysis: Children, Youth and Families. This course applies a systematic analytical framework for a critical and in-depth analysis of federal, state and local policies that shape programs affecting children, youth and families in rural settings. Examines how policy impacts practice with diverse populations. Prerequisite: completion of foundation transition courses.

567-2 Advanced School Social Work Issues. Exploration of policies, programs, practice and legislative trends affecting public service in school social work. Prerequisite: 533.

570-3 Gerontology and Social Work. Examines the major psycho-social and ecological theories of human aging within the framework of social work practice. Extrapolations of those theories and application of them to social work practice and research are emphasized.

575-3 Policy and Program Issues of Aging. Examination of public policies that impact on the quality of life of the elderly. Major programs are identified and analyzed. Future policy issues are discussed.

576-1 to 6 Selected Topics in Aging Practice Issues. Examination of selected knowledge and skills useful for gerontological social work practice. In-depth study on specific topics will be conducted. Prerequisite: 570.

577-1 to 4 Selected Topics in Research. Individualized advanced research projects related to student interest. Graded *S/U*. Prerequisite: completion of foundation or transition courses or consent of the school.

578-3 International Social Work. Critical examination of the nature and scope of social welfare programs in other

nations including: personal social services, income maintenance, health care and social development programs. Emphasis is on policies in Third World countries. Prerequisite: completion of foundation or transition courses or consent of the school.

598-1 to 4 Social Work Research Paper. Preparation of a final research paper as partial requirement for the M.S.W. degree. Graded *S/U* only. Prerequisite: completion of foundation or transition courses and consent of the school.

599-3 Thesis in Social Work. A partial and optional requirement for the M.S.W. degree. A written report of the student's research project in the chosen area of concentration. Graded *S/U* only. Prerequisite: completion of foundation or transition courses or consent of the school.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs or who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

SOCIOLOGY

<http://sociology.siu.edu/>
sociology@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Alix, Ernest K., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1966; 1967.

Burger, Thomas, Associate Professor, *Emeritus*, Ph.D., Duke University, 1972; 1973. Theory, history of social thought, social stratification.

Calhoun, Thomas C., Professor, *Emeritus*, Ph.D., University of Kentucky, 1988; 2001.

Dunn, Jennifer L., Associate Professor, Ph.D., University of California Davis, 1999; 1999. Social psychology, deviance, criminology, victimology.

Hawkes, Roland K., Associate Professor, *Emeritus*, Ph.D., Johns Hopkins University, 1967; 1970.

Hendrix, Lewellyn, Professor, *Emeritus*, Ph.D., Princeton University, 1974; 1971.

Hope, Keith, Professor, *Emeritus*, Ph.D., London University, 1963; 1986.

Martin, Derek C., Assistant Professor, Ph.D., University of California, Irvine, 2005; 2005. Race relations and ethnicity.

Nall, Frank C., II, Associate Professor, *Emeritus*, Ph.D., Michigan State University, 1959; 1964.

Reed, Jean-Pierre, Assistant Professor, Ph.D., University of California-Santa Barbara, 2000; 2009. Cultural sociology, social change, theory.

Schneider, Mark A., Associate Professor, *Emeritus*, Yale, 1985; 1994.

Shelby, Lon R., Professor, *Emeritus*, Ph.D., University of North Carolina, 1962; 1969.

Sherkat, Darren E., Professor, Ph.D., Duke University, 1991; 2001. Religion, social movements, quantitative methods.

Ward, Kathryn B., Professor, Ph.D., University of Iowa, 1982; 1982. Gender, international political economy, social movement.

Whaley, Rachel B., Assistant Professor, Ph.D., University of Albany, Suny, 1999; 2006. Crime and deviance, sociology of gender.

Wienke, Chris., Assistant Professor, Ph.D., University of Pittsburg, 2003; 2008. Sociology of family, sexuality, gender and qualitative methodology, social inequality, and cultural sociology.

The Department of Sociology offers graduate work leading to the M.A. and Ph.D. degrees. The M.A. degree program gives students an opportunity to acquire a general knowledge of sociology through lecture courses, seminars, and exposure to a variety of theoretical and methodological approaches. The Ph.D. degree program centers around advanced offerings in the areas of theory, methods, deviance, social movements, gender, race and ethnic relations, sexualities, religion, development, and culture. A special concentration in criminology, deviance, and administration of justice allows interested students to pursue a substantial part of their doctoral studies in Administration of Justice.

The faculty of the department is research-oriented and supports such an orientation on the part of its students. The department maintains a small library and state of the art computer facilities for qualitative and quantitative analyses.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Sociology. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Admission to Graduate Study in Sociology

The department requires an undergraduate GPA of 3.0 for admission to the M.A. degree program and a graduate GPA of 3.25 for admission to the Ph.D. degree program. The department of Sociology does not have direct post-baccalaureate degree entry into the doctoral program; students need to have a residential two-year M.A. degree in sociology or closely related fields (exceptions may be made on a case by case basis) to be considered for admission to the Ph.D. Program. To apply to either program, the student must submit a statement of purpose, three reference letters, a writing sample, and official transcripts of all undergraduate and graduate academic grades to the department for review by the graduate admissions committee. Scores from the Graduate Record Examination are required for consideration for admission and university-wide fellowships.

Complete applications received by December 15 will receive full consideration for fellowships and other departmental and university support that will begin the following fall semester (see Graduate School website listed below). March 1st is the deadline to apply for admission in the following fall semester with no guarantee of consideration for funding. Admission for the spring semester will be given only in exceptional circumstances. International students must achieve 550 or better on TOEFL scores.

Persons seeking more information should write: Director of Graduate Studies, Department of Sociology, Southern Illinois University Carbondale, Carbondale, IL 62901-4524. Students can access our department website: www.siu.edu/~socio. Here you can find more information about the department, faculty, students, and download admission forms for domestic and international students. For more information about graduate fellowships, which have January/February deadlines and financial assistance programs, see the Graduate School website: <http://www.siu.edu/gradschl/finances.htm>.

Admission from SIUC MA to Ph.D. Program. Students who enter the M.A. program are not automatically admitted to the Ph.D. program until successful completion of the M.A. degree and admission approved by Graduate Studies Committee and Graduate School. Students who wish to continue work towards a doctoral degree must submit a formal application including the departmental application form, a statement of purpose, two letters of recommendation, a writing sample, and transcripts (these can be pulled from student's file). Applications will be reviewed using the policies, procedures, and guidelines applicable to external Ph.D. applicants and will involve an assessment of performance in the M.A. program. Applications must be received by December 15th to receive full consideration for fellowships and other departmental and university support. Internal applicants who submit applications by October 1 will be notified regarding admission (but not funding) by November 1.

Graduate Assistantships and Fellowships

A limited number of assistantships for qualified students are available through the department on a competitive basis. There are also various fellowships awarded by the Graduate School in university-wide competition that have deadlines in January and February. New students seeking funding should apply by December 15 of each year. Students funded through the department are required to enroll in a minimum of nine credit hours each semester. Funding is normally limited to four semesters for M.A. degree students and eight semesters (up to 48 months including Dissertation Research Award) for Ph.D. degree students. A student's continued funding is contingent on the student's satisfactory progress in the program, annual evaluations by faculty (on students' performance in classes & readings, work assignments, progress in program, and professional service and activities), passing comprehensive exams in a timely manner, and on the availability of funds.

Graduate Student Evaluation Criteria

Decisions about funding and admission from the M.A. program into the Ph.D. program will be based on five criteria:

1. Timely progress in the program. Students are expected to make normal progress toward the degree and failure to progress according to the Graduate Studies Handbook timeline will diminish priority for

funding dependent on availability. M.A. students are expected to complete all course work and the master's paper within two years. SIUC M.A. students seeking admission to the Ph.D. program must submit a formal application to the graduate committee no later than December 15th of the year during which they expect to receive their M.A. degree. Once admitted, Ph.D. students are expected to finish all requirements within three years after having achieved or matriculated with an M.A. Hence, total time from SIUC M.A. through Ph.D. should not usually exceed 5 years; completion of Ph.D. (non-SIUC M.A.) should not exceed 4 years.

2. Grades. Funding will also be contingent on maintaining a minimum G.P.A. of 3.0 assessed in the second year of the M.A. program and 3.25 assessed in the second year of the Ph.D. program. Grades in coursework will also be used as one factor for determining funding. Incompletes in coursework will also diminish priority for funding contingent on resources.
 - After one calendar year, incompletes will turn into F grades.
 - Students with incompletes in theory (SOC 501 & SOC 502) and methods/stats (SOC 526, SOC512, SOC514) will be ineligible to take the comprehensive exam.
 - Students with incompletes will have lower priority for selection into the Ph.D. program.
 - With extenuating circumstances, a request for waiver of these policies may be made to the Graduate Studies Committee.
3. Exams. Successful completion of the comprehensive and substantive exams increases priority for funding, while failing decreases priority. Failure of the comprehensive exams may preclude departmental funding. Ph.D. students must also complete a substantive examination by the end of the first semester of the third year of Ph.D. work (three years after having achieved or matriculated with an M.A.).
4. Prospectus and research. Priority for funding will decrease if a student has not made progress towards a prospectus committee by the end of the third year of Ph.D. work. Ph.D. students are expected to have defended a dissertation prospectus by the beginning of the first semester of the fourth year of study at SIUC to be considered making normal progress. Additionally, students who have presented professional papers or published papers will be given increased priority for departmental funding.
5. Teaching evaluations. Priority for teaching-related funding will also be tied to successful teaching as indicated by teaching evaluations and faculty oversight. Students with strong research skills (indicated

by coursework and exam performance) will be given priority for research-related funding.

Master of Arts Degree

The Master of Arts degree in sociology requires a minimum of 30 semester hours of course work and a research paper. Students are required to take the following three courses: SOC 501, Classical Sociological Theory (3 hrs); SOC 526a, Statistical Data Analysis in Sociology I (4 hrs); and SOC 512, Sociological Research Methods and Design (4hrs.), (students must receive an A or B in all three classes). Students are required to enroll in four additional graduate seminars (12 hrs) in sociology or related disciplines (one of which may be at the 400 level), and in four credit of Individual Research for completion of the master's degree research paper (Sociology 591). Students may take Independent Readings (Soc 596) and approved graduate level courses in other departments as long as the above requirements are also fulfilled.

Credit Hours per Semester. We require full-time students with full assistantships (i.e., ½ time assistantships) to enroll in 9 credit hours per semester. Students with graduate fellowships, Veteran's benefits, or SIUC scholarships also must take at least 9 credit hours as required by the Graduate School. Once students on assistantships complete all requirements except the master's paper, the minimum credit hours is 6.

Master's Research Paper. The research paper is developed from a paper produced in a sociology course or through independent readings/research with a faculty member. Students will select an advisor for the Master's Research Paper (e.g., the person who taught the course or supervised the readings/research project). Students will enroll with this faculty member for 4 semester hours in SOC 591, Individual Research, for the completion of the research paper. This course can be taken concurrently with or after the research seminar. The selection of the advisor requires paperwork that must be filled with the Director of Graduate Studies. The research paper will then be submitted for evaluation to another faculty member selected in concurrence with the faculty advisor for the paper. In case of disagreement over the evaluation (pass/revision/fail) of the paper, the graduate studies committee will appoint a third reader. The master's research paper normally is 20 to 40 pages in length and uses the standard American Sociological Review reference style. In addition to the copy required by the Graduate School, one suitably bound copy must be deposited in the department library.

Early Admission to the Ph.D. Degree Program. Upon completion of two semesters of full-time study, a student may petition to waive the M.A. degree and be admitted to the Ph.D. degree program in sociology, if the following conditions have been met: 1) minimum GPA of 3.7 during the first year of study; and 2) approval by advisor and graduate studies committee of a research paper completed during

the first year of study. The procedure and standards for approval of the paper are the same as for the regular master's research paper. The student will be expected to finish the Ph.D. degree within four years of entry into the program.

Doctor of Philosophy Degree

Advisement. The responsibility for initial advisement rests with the director of graduate studies. As soon as possible, the director of graduate studies, in consultation with the student, will request an appropriate member of the department's graduate faculty to serve as the student's academic adviser. This adviser will help prepare a general plan of study (see Appendix B) and will be responsible for making sure that her/his student is enrolled in the correct hours each semester and fulfilling the tool, substantive seminar, and readings requirements. It is the student's responsibility to develop, in consultation with his/her adviser, a plan of study leading to timely completion of the comprehensive examinations and a dissertation. This plan of study will be filed in the student's permanent file. Change of adviser should be filed with the Director of Graduate Studies.

Research Tool Requirement. Doctoral students must complete the following courses: SOC 501, 502, 512, 514, and 526a, 526b, and teaching Sociology seminar SOC 518 with grades of A or B (equaling 25 credit hours). Students entering the Ph.D. program from outside of the department may petition the graduate studies committee to take a proficiency test in SOC 512 and SOC 526a if they satisfactorily completed and received graduate credit for equivalent design and statistics courses. Students must submit a written request to take each exam, provide documentation of credit (i.e., transcript in application), and a syllabus for each equivalent course. Students will then take test(s) (e.g., the final examination for the most recent offering of SOC 526a). The exam will be graded by the faculty who most recently taught the course or, if necessary, another sociology professor who have recently taught the course or is otherwise qualified to grade the exam. Students must earn at least 85% on the exam to waive the respective requirement. The petition, exam, and evaluation must occur sufficiently prior to the term when the courses are offered. If either are offered in a student's first semester, the petition must occur within 30 days of when the student accepts the offer of admission. If the student does not earn at least 85% on the exam, the student must enroll in SOC 526a and/or SOC 512 accordingly.

In addition to these courses, students must develop research skills that are appropriate and necessary for their dissertation research (see the next section and the timelines for additional requirements and clarifications). It is the responsibility of the student's program adviser to supervise the student's development of these research skills.

Course Work and Readings. While in the Ph.D. program, students must take at least three substantive, 500-level,

seminars in sociology (9 credit hours; on a case by case basis, permission may be granted in a related discipline) beyond the tool and MA seminar requirements. The seminars should be taken prior to the substantive examination. In addition to the regularly offered courses and seminars, the department provides supervised readings and research courses, depending upon the availability of faculty members. Supervised readings and research courses are not to be taken as substitutes for regularly scheduled courses and seminars, and registration in them requires prior written approval by the readings faculty, the student's adviser. The departmental form must be filed with the Director of Graduate Studies. Subsequently the registration form and closed section card must be completed, initialed by the readings faculty, and signed by either the adviser, the department chair, or the Director of Graduate Studies.

Credit Hours per Semester. We require full-time students with full assistantships (i.e., ½ time assistantships) to enroll in 9 credit hours per semester. Students with graduate fellowships, Veteran's benefits, or SIUC scholarships also must take at least 9 credit hours as required by the Graduate School. Once students on assistantships complete all requirements except the master's paper, the minimum credit hours is 6.

Comprehensive Examinations. Ph.D. students must pass two written comprehensive exams: the Doctoral Comprehensive Exam which is taken during the second weekend in January of the second year (prior to the start of 4th semester), and the Substantive Comprehensive Exam on the student's research field which should be finished within one year (i.e., by the beginning of the spring semester in the student's third year or 6th semester). Students should form the substantive exam committee within three months after completion of the Doctoral Comprehensive Exam.

Accelerated option. With adviser's approval, Ph.D. students with a SIUC MA may notify the Director of Graduate Studies in writing that they wish to take the comprehensive exam in their first year in the Ph.D. program (on the second weekend in January). With this option, the Substantive Comprehensive Exam still must be completed within a year, by the start of spring semester (4th semester) of their second year. See sections below for more details on the examinations.

Doctoral Comprehensive Exam: This examination will be geared towards the demonstration of sociological insights, and its results will be graded by any two faculty members who taught a graduate course or supervised graduate students in the preceding three semesters. All Ph.D. students who have completed their third semester in the Ph.D. program must take the exam.

Using an article selected by the examination committee, students will discuss and provide written commentary and critique on key substantive concepts, theories, method, analysis, and sociological insights or contributions in 15

double-spaced typed pages, 12 pt font. Students will be assessed on their ability to clearly and concisely summarize, discuss, and critique the article and provide alternative theoretical and/or methodological arguments. The examination committee will consist of two faculty members who have taught graduate courses and/or supervised graduate students in the previous three semesters. The examiners will be chosen by lottery conducted by Director of Graduate Studies. The examiners will rotate every exam period. The two faculty members will select a sociological article for the exam at least 2-3 days before the exam. Faculty graders will have up to four full regular semester weeks to grade the comprehensive exams. They will grade the exam and report their individual written results in two weeks afterwards to the Director of Graduate Studies. Results will be Pass or Fail and the grade will be used as one aspect of evaluation for continuation in the program.

Annual Faculty Review: All Ph.D. students will compile dossiers that will be used in a full faculty review of on-campus Ph.D. graduate students (including ABDs), with special focus on graduate students in their second and third years of study. The review will occur in late February or early March [students will be notified by October 1 of the date to submit materials]. Students must submit a full portfolio of papers, syllabi, teaching philosophy, evaluations, and grades-courses taken (including the qualifying exam grade), and a CV, along with a statement of purpose for completing PhD studies.

- Up- to-date curriculum vita: name, address, education, current position, assistantship and work history in department, courses taught, research-paper presentations and publications, professional memberships, and other scholarly activities.
- One page statement each for future direction(s): a) research direction(s) with topics, substantive comp dates, prospectus topic and dates, proposed chair and committee members; if ABD, dissertation topic, date prospectus completed, and date of dissertation completion; chair, committee members; and b) teaching direction(s) including syllabi & evaluations for course(s) taught and/or prepared.
- One writing sample: best effort from a seminar and/or paper presentation.

For each student, at least one faculty member must agree to supervise the student through the completion of the Ph.D., and at least three other faculty members must agree to serve on the student's dissertation committee. This will be done in two separate blind ballots of the full faculty for each non-ABD student. The first ballot will assess willingness to serve as the student's dissertation chair, and the second will assess willingness of faculty to serve on the student's dissertation committee. If a student fails to achieve at least one vote on the first ballot, and at least four votes on the second ballot, they will be terminated from the program. For ABD students, the faculty will

review your timely progress towards completion of your dissertation.

Substantive Comprehensive Examination: The substantive examination will assess students' mastery and ability to think and write critically about any one of the areas the department identifies as eligible for examination and the student chooses. Only areas in which there are two or more faculty are eligible for examination. The graduate director will maintain a current list of areas in which we have sufficient faculty, updating it as appropriate. Two faculty will grade the examination. If there are more than two faculty in an area, grading will rotate among the eligible faculty, who will be randomly sampled. When possible, no faculty will be asked to grade an additional exam in an area until all faculty have been examiners. If the faculty disagree whether the student has passed the examination, a third faculty will grade the examination, also randomly sampled from those in the area, or from the full faculty if there are not additional faculty in the area.

In consultation with the faculty who are grading the examination, the student will prepare a list of readings with which to familiarize herself or himself prior to the examination period. Students will provide examiners with a preliminary readings list 120 days prior to the end of the semester in which the student plans to take the examination. Examiners then have 30 days to recommend changes to the list; if none are recommended within that period the list will be considered accepted. After this 30 days, the student has an additional 30 days to prepare, during which the faculty who are grading the examination will construct the questions from which the student may choose. Faculty will provide the student with the questions at the end of this period and the student then has 30 days to complete the examination. Students will respond to 3-5 questions in a paper no longer than 40 pages (excluding references). Questions will be designed to assess the student's knowledge of and facility with the history and development of the area, its key theoretical perspectives, early and contemporary debates, and trends indicating the state of the field. Questions will also be designed to elicit in-depth analysis and critique. Upon completion of the examination, the grading faculty will have 30 days to read it and return it to the student. Students must complete examinations 30 days prior to the end of a semester; faculty are not expected to grade examinations over breaks.

IMPORTANT: Students are also required to demonstrate their mastery of a second area through two or more of the following: taking seminars (especially earning a certificate and/or emphasis), teaching undergraduate courses, writing for a scholarly audience (presenting and especially publishing), and appropriate use in the dissertation. The chair of the student's dissertation and at least one faculty in that area will certify the student's competence in a letter of reference. This can be done at any time prior to graduation or entry into the job market, whichever comes first.

Assessment of Substantive Comprehensive Examination: Faculty will read and assess the paper. Faculty graders will have up to four full regular semester weeks to grade the exams. At the discretion of the grading faculty, the student may be asked to defend the examination orally before a passing grade is awarded. Outcomes include: High Pass; Pass; Revisions; Fail. A final copy of the exam should be deposited with the Graduate Secretary. In the event of Revisions, only one revision is permitted, and it must be completed within one month. An oral defense of the revisions may also be required at the faculty's discretion. Students who fail the exam may petition the graduate studies committee to retake the exam. Students who fail revisions or a retake must withdraw from the program.

Dissertation. The dissertation is the single most important requirement for the Ph.D. degree, and the student should start thinking about potential dissertation topics soon after admission. Information concerning Graduate School requirements regarding the dissertation is contained in the Graduate Catalog.

After completing comprehensive examinations, in consultation with the graduate director and adviser, the student selects a dissertation director who must be approved by the dean of the Graduate School. In consultation with the dissertation director, the student selects a committee consisting of four additional graduate faculty members, including one from outside of the Department of Sociology. Students selecting the Criminology/Deviance/Administration of Justice option may have committee members from Administration of Justice who serve as either inside or outside members. Exceptions to this committee membership will be granted in only limited circumstances.

Normally, students are encouraged to use the three members of their substantive comprehensive examination committee as the initial members of the dissertation committee. However, students may change the composition of the committee if necessary. First, the student must find a dissertation chair, who must agree to serve and who must also be a member of the Graduate Faculty. Second, the student must identify the remaining members of the committee. Five committee members are needed, and at least one must be from outside of the department of sociology. After discussion with current chair/members and new/potential members, students may reconstitute a dissertation committee prior to the dissertation defense. Notification of the new members and chair is needed in writing to the Director of Graduate Studies.

The student then prepares a detailed dissertation prospectus, showing clearly the purpose and scope of the research, its relation to the previous work in the field, its theoretical relevance and significance, and the research methods and techniques. The prospectus must contain a section documenting the student's training and abilities in using the proposed research methods and techniques. When the prospectus is ready for presentation, the gradu-

ate director forwards to the Graduate School a dissertation committee roster with the student's dissertation director serving as chair. The dissertation committee will have at least two weeks to read the prospectus before the formal session. During summer months, students should consult with all committee members prior to arranging for any hearings. The prospectus must be approved by the dissertation committee in formal session and filed with the graduate program secretary. A prospectus must be approved no later than the end of the full-time student's sixth semester in the Ph.D. program.

Dissertation Defense. The completed dissertation must be acceptable to the chair of the dissertation committee before being circulated among committee members for evaluation. After acceptance of the dissertation by the candidate's dissertation committee, an oral examination will be conducted by the committee in open meeting, as specified by Graduate School regulations. This examination will be based upon the contents and implications of the dissertation. The examination should not be scheduled sooner than four weeks after the completed dissertation has been distributed to the dissertation committee. A public announcement and a copy of the dissertation shall be made available to other faculty of the department at least one week before the examination. Upon satisfactory completion of the oral examination, the student must submit two copies of the dissertation to the Graduate School and another copy, suitably bound, must be deposited in the department library.

Expected Progress Through the Ph.D. Degree Program for a Full-Time Student with an MA in Sociology or related fields from a program other than SIUC Sociology (for Students with SIUC MA in Sociology, see the next section).

Summary of General Requirements (also see Appendix B): The Ph.D. in sociology for students with an external M.A., requires a minimum of 26 credit hours (with testing out of two, and 34 otherwise) of courses/readings and 24 hours of dissertation work, for a total of 50 (or 48) credit hours. Students are required to take the following six courses for the research tool: SOC 501 (3 hrs); SOC 502 (3hrs), SOC 526a (4 hrs); SOC 526b (4hrs); SOC 512 (4 hrs), and SOC 514 (4 hrs); students must receive an A or B in all classes. Additionally, students are required to enroll in SOC 518, Teaching Sociology (3 hrs), three additional graduate seminars (9 hrs) in sociology or in approved disciplines, and in 24 credit hours of SOC 600 (Dissertation Research (only 6 hrs of dissertation are allowed before ABD status). At least twenty-four hours of Ph.D. coursework must be completed in residence on campus (only 6 hours of dissertation count toward this 24 hour requirement).

Semesters 1 through 4: It is expected that students will take at least five of the courses for the research tool and SOC 518 in their first 4 semesters in the program (21 hrs). Additionally, students are required to take three substantive graduate seminars (9 hrs) prior to the substantive compre-

hensive examination. Completion of comprehensive exam should occur no later than the start of in Semester 4. Within three months after completing the comprehensive exam, all students are expected to comprise a substantive examination committee of three faculty members.

Semesters 5 and 6: It is expected that students will complete any outstanding requirements in this year (and continue to take a minimum of 9 credits per semester if receiving funding). When students have met all the seminar and research tool requirements, they can proceed to their substantive comprehensive exam. It should be completed no later than the beginning of Semester 6. Subsequently, students may proceed to the prospectus. Up to 6 credit hours in dissertation research may be taken prior to ABD status.

Semesters 7 and 8: Carry out research and write dissertation. Need 24 hours of dissertation for graduation.

Expected Progress Through the Ph.D. Degree Program for a Full-Time Student with a Sociology MA from SIUC

General Requirements. The PhD in sociology for a student with a SIUC M.A., requires a minimum of 23 credit hours of courses/readings and 24 hours of dissertation work, for a total of 47 credit hours. However, 6 hours of dissertation credit may be taken prior to ABD status and may count toward the Graduate School's 24 credit residency requirement. In this case, the minimum sums to 41 credit hours. Credit toward Ph.D. hours begins with formal admission to the PhD program after receipt of the M.A. degree. Although the Department recognizes any research tool or teaching courses taken during the MA program, these hours do not count toward the 24 Ph.D. in residence hours needed. As for students with an outside M.A., internal M.A. students must take three additional graduate seminars (9 hrs) in sociology or in approved disciplines.

We assume in the following time-line that continuing students have taken SOC 501 (3 hrs); SOC 526a (4 hrs); SOC 512 (4 hrs), and four additional graduate courses (12 hrs) in sociology or related disciplines.

Semesters 1 and 2: Students should take 502, 514, 526b and 518 if not taken yet (10 credits hours). An additional three substantive 500-level seminars should be taken in semesters 1 through 3 (9 credit hours). If the former courses were taken during MA studies, students still need to make sure they achieve the 24 credit hour residency requirement through a combination of the 9 credits in seminars, up to 6 credits in SOC 600 (after taking exams), and other credits (e.g., other seminars, readings, research credits). Ph.D. students with an SIUC M.A. may take the Comprehensive Exam at the start of their second semester. In this accelerated option, students should then proceed to Substantive Comprehensive Exam preparation and form a committee within three months after the Comprehensive Exam.

Semester 3 and 4: SIUC MA students should take 502, 514, 526b and 518 if not taken yet and any remaining re-

quired seminars. If the Comprehensive Exam was completed in semester 2, completion of the substantive comprehensive exam should occur no later than the beginning of Semester 4 (i.e., within one year after the Comprehensive Exam). Students may enroll in up to 6 dissertation credit hours to prepare Dissertation Prospectus and Defense during Semester 4.

Semesters 5 and 6: For students in the accelerated plan (who took the comprehensive exam at start of semester 2 and the substantive at start of semester 4), semesters 5 and 6 are for the Dissertation. Students need 24 hours of dissertation (SOC 600) for graduation (again, 6 of which may be taken prior to candidacy and toward the residency requirement). For students who did not take their substantive exam by Semester 4, they should be actively preparing in Semester 5 and should complete it by Semester 6.

Semester 7 and 8: (optional): Carry out research and write dissertation. Need 24 hours of dissertation for graduation.

Criminology/Deviance/Administration of Justice Option.

A student who has been admitted to the Ph.D. program in sociology, and whose major interest is in the area of crime or administration of justice needs to incorporate the following courses, examinations, expectations, and committee guidelines into her/his program of study:

Required Courses:

- AJ 500 Foundations of Criminal Justice
 AJ 504 (Criminological Theory) or Soc 572 (Seminar in Criminology).

Two additional 500-level courses, from the following:

- Soc 562 Seminar in the Sociology of Deviance and Social Control
 Soc 530 Topical Seminar in Sociology (when topic is relevant)
 AJ 540 Seminar in Theory and Practice of Crime Prevention
 AJ 550 Seminar in Juvenile Justice and Delinquency
 AJ 562 Law and Social Control
 AJ 571 Seminar in Punishment and Corrections
 AJ 576 Policy Analysis
 AJ 577 Policy and Program Evaluation
 AJ 578 Seminar in Correctional Rehabilitation
 AJ 584 Administration and Management in Criminal Justice
 AJ 587 Seminar in Policing
 AJ 592 Advanced Seminar in Criminal Justice and Criminology

* Note: ONE of the 4 courses required for the concentration must be a sociology course.

Expectations:

1. Students will complete their Substantive Comprehensive Exam in the area of concentration
2. Students' dissertations will be on a topic related to the area of concentration

Committees:

Students' substantive comprehensive exam committees will have at least one sociology faculty member. Students' dissertation committees will each have at least two sociology faculty members who are members of the Graduate Faculty.

Administration of Justice faculty who are members of the graduate faculty may serve on both substantive comprehensive exam committees and dissertation committees and they may chair substantive comprehensive exam committees. Administration of Justice faculty who have direct dissertation status may serve as chair of students' dissertation committees. Administration of Justice faculty do not have to be cross-appointed sociology faculty to serve in these capacities.

Advising:

Prior to the appointment of the dissertation chair, faculty advisors for PhD students should be sociology faculty members.

Certificate in Women's Studies

A student interested in a certificate in Women's Studies should contact the Women's Studies coordinator and/or cross-listed Sociology faculty for the required courses and guidelines.

See also:

<http://www.siu.edu/~women/WomensStudiesGraduateCertificateInformation.html>

M.A. and Ph. D. students who wish to incorporate the certificate requirements into their program of study may do so. Note: ONE of the courses required for the certificate must be a sociology course.

Sociology as a Secondary Emphasis in Another Ph.D. Degree Program

A student who is enrolled in another Ph.D. degree program and who wishes to declare sociology as a secondary area must submit to the director of graduate studies a written request which includes the following: a plan of course work, a personal reading list, and an overall program statement indicating the relationship of the area in sociology to the student's total program.

Interdisciplinary Ph.D. Degree Program in Sociology

Students who have been admitted to the Ph.D. degree program in sociology, and who wish to develop an interdisciplinary program, should review the guidelines set forth by the Graduate School. The graduate dean approves interdisciplinary Ph.D. degree programs only when they bear the endorsement of a department that offers a Ph.D. degree program. A student who wishes to apply for an interdisciplinary program in which sociology will be the sponsoring department, should understand that the program of study must include substantial involvement in sociology courses and seminars, and that the department may require the student to meet other requirements similar to those established for the Ph.D. degree program in sociology.

Courses (SOC)

406-3 Social Change. Theories and problems of social change; their application, with emphasis on the modern industrial period.

415-3 Logic of the Social Sciences. (See Philosophy 415.)

423-3 Sociology of Gender. (Same as Women's Studies 442.) Examines social science theory and research on gender issues and contemporary roles of men and women. The impact of gender on social life is examined on the micro level, in work and family roles, in social institutions, and at the global, cross-cultural level.

424-3 Social Movements and Collective Behavior. An analysis of social behavior in noninstitutional settings such as crowds, disasters, riots, mass panics, crazes, cults, and social movements. Emphasis is on the cultural and structural factors leading to collective action and its impact on social change.

426-3 Social Factors in Personality and Behavior. (Same as Psychology 464) Advanced study of social psychology from both sociological and psychological perspectives. Analyzes the reciprocal influence of groups and individuals, including the development of self, social interaction, gender and ethnic relations, impression management, interpersonal attraction, and social influence.

435-3 Social Inequality. Discussion of theories and evidence pertaining to the socio-structural causes and consequences of inequality based on social class, prestige, power, gender, wealth and income.

437-3 Sociology of Globalization and Development. Survey of sociological theories and research on globalization and development: modernization, dependency, world-system, and global economy. Problem areas include population growth and control, economic growth and underdevelopment, role of state, transnational corporations, financial institutions, and organizations, non-governmental organizations, work, population, migration, social movements and resistance, gender, race-ethnic, class, and sexuality issues.

438-3 Sociology of Ethnic Relations in World Perspective. Examines theories, concepts and research on the structure of ethnic relations and ethnic problems in contemporary societies in major world regions. Assimilationist, pluralist, secessionist, and militant types of ethnic and racial group relations are covered in selected societies. Designed for students with advanced interest in comparative ethnic relations. Prerequisite: 215 is recommended.

460-3 Sociology of Medicine. Analyzes the social structures and issues involved in health, illness, and health-care delivery systems in the United States. Explores the economic and political influences on the role of medicine in society, as well as the organization of medical care and health institutions. Critically examines the social processes and factors that influence health and illness behavior.

461-3 Women, Crime and Justice. (Same as CCJ 460 and Women's Studies 476.) Addresses the topic of women as offenders, as victims and as workers in the criminal justice system.

462-3 Victims of Crime. (Same as CCJ 462.) Examines the extent and nature of victimization, theories about the causes of victimization, the effects of crime on victims and services available to deal with those effects, victims' experiences in the criminal justice system, the victims' rights movement and alternative ways of defining and responding to victimization.

465-3 Sociology of Aging. The adult life cycle from a sociological perspective, with emphasis on the later stages of adulthood. Special topics on aging include demographic aspects, family interaction, ethnicity and cross-cultural trends.

471-3 Introduction to Social Demography. Survey of concepts, theories, and techniques of population analysis; contemporary trends and patterns in composition, growth, fertility, mortality and migration. Emphasis is on relationship between population and social, economic, and political factors.

473-3 Juvenile Delinquency. (Same as CCJ 473.) Nature of sociological theories of delinquency; analytical skills in studying the delinquent offenders; systematic assessment of efforts at prevention, control and rehabilitation in light of theoretical perspectives. Prerequisite: 6 hours of social/behavioral science recommended.

474-3 Sociology of Education. Methods, principles and data of sociology applied to the educational situation; relation of education to other institutions and groups.

475-3 Political Sociology. (Same as Political Science 419.) An examination of the social bases of power and politics, including attention to global and societal political relations, as well as individual-level political beliefs and commitments; primary focus on American politics.

476-3 Religion and Politics. (Same as Political Science 476.) Examines the connection between religious beliefs and institutions and political beliefs and institutions. Comparative studies will focus on religious political movements in the United States and throughout the world.

490-3 to 12 (3,3,3,3) Special Topics in Sociology. Varying advanced sociological topics selected by the instructor for study in depth. May be repeated for a maximum of twelve semester hours provided registrations cover different topics. Topics announced in advance.

501-3 Classical Sociological Theory. A systematic survey of sociological theory with the focus on 19th and early 20th-century sociological thought. An in-depth examination of a selected number of thinkers whose work laid the foundation for major schools of contemporary sociology. Students are expected to be familiar with the fundamentals of sociological analysis.

502-3 Contemporary Sociological Theory. A survey of major 20th-century theoretical orientations in sociology with emphasis on their differing modes of conceptualization and alternative research programs. Students are expected to be familiar with the classics of sociological thought.

506-3 Seminar on Contemporary Sociological Theory. Recent trends in sociological theory; current approaches to the construction and application of theoretical models and their relations to empirical research. Prerequisite: 501 or consent of instructor.

512-4 Sociological Research and Design. Sociological research methods and design. Focus on research process: identification of the role of theory, formulation of research questions, research design and quantitative, qualitative, and mixed method data collection techniques. Connections between theory, research design and measurement decisions, and interpretation (answering research questions) are emphasized throughout. Includes practical and ethical issues, e.g. informed consent.

514-4 Qualitative Methodology. Focus on research strategies involving the systematic exploration, documentation and analytic description of social settings, interactions, meanings, lifeworlds and texts. Includes discussion of field observation, depth interviewing, oral histories/narratives, case studies, biographies and life histories, focus group interviewing, content analysis of written and visual data, historical/archival investigations, among other approaches.

518-3 Teaching Sociology. Emphasis is on the development of teaching skills and pedagogical knowledge for instructors in sociology.

521-3 Seminar in Social Psychology. In-depth examination of specific theoretical systems or substantive problems in social psychology. Students wishing specific information on the topic of the seminar should consult with the instructor for more detail. Prerequisite: 426 or consent of instructor.

526a-4 Statistical Data. Provides a foundation in univariate and bivariate descriptive statistics, inferential statistics including hypothesis testing about population parameters and bivariate and multivariate relationships and measures of association for nominal, ordinal and interval-ratio variables, and an introduction to bivariate and multivariate correlation and linear regression (including concepts of causal modeling and control variables). Prerequisite: Graduate standing

526b-4 Statistical Data analysis in Sociology II. Provides in-depth instruction in multiple regression including assumptions of linear model, diagnostics and corrections for violation, exploratory factor analysis, using categorical dependent variables (logistic and multi-nominal regression), nonlinear relationships, interactions, and extensions to advanced techniques as time allows. Prerequisite: SOC 526a (or successful pass of proficiency test).

530-2 to 12 (2 to 4 per topic) Topical Seminar in Sociology. Content varies with interests of instructor and students. Prerequisite: consent of instructor.

533-3 Seminar in Social Stratification. Comparative study of power, social class, and status; conceptions of social structure and measurement techniques; explanations of social and occupational mobility; institutions and differential life-changes.

534-3 Seminar in Globalization and Social Change. Overview of prevailing theories, research, methods, and analysis in globalization and social change. These include socio-economic changes in capitalism and development, emergence of global social change agents: transnational corporations, financial institutions, and organizations, non-governmental organizations; informalization of work, population, migration, social and revolutionary movements, gender, race-ethnic, class, and sexuality.

539-3 Seminar in Complex Organizations. Overview of theories, research, and prevailing issues of complex organizations. These will include the power structure of the business community, emergence and structure of the bureaucratic organization, bases of authority, systems of formal and informal relations, unanticipated consequences of organizational structure, labor relations, total institutions and social movements as organizations.

542-3 Seminar on the Family. Overview of the theoretical approaches, substantive issues, and techniques of research and measurement in the study of American family life. Approaches include structural-functionalism, conflict theory, and the feminist critique. Among the substantive topics are family roles and relationships, kinship, relationships of the family to other institutions and family change.

543-3 Seminar on Comparative Family Systems. Analysis of cross-cultural and historical variation in family structure. Methods and sources of information for research on family structure.

544-3 Sociology of Gender. (Same as Women's Study 544) Examines major theories, themes, and research methods on the intersection of gender, race, class, and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movements; intersection of family and work; parenting and reproduction; historical and cross-national dimensions.

550-3 Seminar in Social Problems. Theoretical perspectives and empirical findings on the emergence and evolution of social problems. Examination of institutional responses and formation of social policy.

551-3 Sociology of Religion. Theoretical and empirical study of the origin, location and function of religious ideas and institutions in society.

552-3 Seminar in Race and Ethnic Relations. Overview of theories, research and prevailing issues of race and ethnic relations in contemporary societies. Discussions will include world expansion during colonialism, political economy of minority groups, class and gender issues in the global development.

555-3 Social Movements and Collective Action. A seminar designed to survey the major sociological approaches to social movements and collective action. Emphasis will

be on movement culture, social movement organizations and the social environment in which collective action occurs.

562-3 Seminar in the Sociology of Deviance and Social Control. Critical analysis of sociological theories and methods used in the study of social deviance and control. Examination of social deviance such as suicide, mental illness, sexual variance, drug use and alcoholism.

572-3 Seminar in Criminology. A survey of classical and contemporary theoretical perspectives related to crime and justice.

591-1 to 4 Individual Research—Supervised Research Projects. Open to graduate students with a major in sociology. Graded *S/U* only. Prerequisite: consent of instructor and departmental director of graduate studies.

596-1 to 8 Readings in Sociology. Supervised readings in selected subjects. Graded *S/U* only. Prerequisite: consent of instructor and departmental director of graduate studies.

600-1 to 32 (1 to 16 per semester) Dissertation. Prerequisite: consent of chair.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

SPECIAL EDUCATION

<http://www.epse.siu.edu/>
 pern@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Bates, Paul, Professor, Ph.D., *Emeritus*, University of Wisconsin, 1978; 1978.

Bruns, Deborah A., Associate Professor, Ph.D., University of Illinois-Urbana Champaign, 2000; 2003.

Chitiyo, Morgan, Ph.D., Assistant Professor, Tennessee Technological University, 2005; 2005.

Crowner, James, Professor, *Emeritus*, Ph.D., Michigan State University, 1960; 1966.

Ewing, Norma J., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1974; 1973.

Hisama, Toshiaki, Associate Professor, *Emeritus*, Ph.D., University of Oregon, 1971; 1971.

Juul, Kristen, Professor, *Emeritus*, Ph.D., Wayne State University, 1953; 1970.

May, Michael E., Assistant Professor, Ph.D., Vanderbilt University, 2007; 2007.

Miller, Sidney, Professor, *Emeritus*, Ph.D., Pennsylvania State University, 1974; 1978.

Mundschenk, Nancy A., Associate Professor, Ph.D., University of Iowa, 1992; 1992.

The Department of Educational Psychology and Special Education offers programs leading to the Master of Science in Special Education and Doctor of Philosophy in Educational Psychology. Special education faculty participate in the Ph.D. in Educational Psychology.

Master of Science in Education degree

The faculty, staff and students in the special education program are committed to making a positive difference in the lives of students with disabilities and their families by increasing their success in school, work, community, and living environments. The graduate plan of study in special education is designed to enhance the applicant's experiences and expertise through academic study, research, and clinical opportunities.

Applicants for the Master of Science in Education degree in special education must meet the criteria for admission to the Graduate School. In addition, candidates must submit a department application form, a letter of application, all undergraduate and graduate transcripts, and two letters of reference to the department. The Special Education Graduate Committee will evaluate the application materials and make appropriate recommendations for acceptance or rejection of admission to the program. It is the responsibility of the committee to exercise professional judgment related to the criteria that applicants must meet in order to be considered for admission to the program. Students will be informed in writing of the Special Education Graduate Committee's decision. Upon admission to the program, the student will be assigned an adviser with whom he/she will design a Graduate Degree Plan.

Masters Program Admission Criteria. Admission to the Masters Program in Special Education will be based upon the following criteria:

1. A baccalaureate degree in special education, elementary education, secondary education or a related field such as social work or psychology.

2. Undergraduate grade point of 2.75 or higher on a 4.0 scale.
3. A minimum of two letters of recommendation, which on the whole, clearly attest to the professional dispositions of a special education professional as articulated in the CEC Code of Ethics and Standards for Professional Practice, and predict academic success at the graduate level.
4. A letter of application (approximately 400 words) in which the applicant summarizes his/her professional goals, career objectives, research interests, motivation for graduate work and other pertinent information.
5. Departmental application form.

All application requirements must be completed before consideration of an applicant for admission. The Graduate Committee evaluates the credentials of each applicant. When an application file is complete, it will be referred to the Graduate Committee to review at their next scheduled meeting. Students may be required to complete an interview with the Special Education faculty.

The Master of Science in Education degree in Special Education requires a minimum of 30 semester hours. Program requirements include the following courses: SPED 500-3 (Research Issues in Special Education), SPED 578-3 (Legal Framework for Special Education), and SPED 599A -1-6 (Thesis) or SPED 599B-1-6 (Research Paper). In addition to the nine hours of required coursework, Masters candidates will be required to select one of five specializations: Early Childhood Special Education, Behavior Intervention, Curriculum Adaptation, Multiple Disabilities, and Supervision.

The following courses are required for each of the specializations:

EARLY CHILDHOOD SPECIAL EDUCATION

Program Requirements

- SPED 500-3 Research Issues in Special Education
- SPED 578-3 Legal Framework for Special Education
- SPED 599A-3 Thesis or SPED 599B-3 Research Paper

Specialization Requirements

- SPED 515-3 Collaboration-Based Delivery Systems in Special Education
- SPED 550-3 Behavior Management of Exceptional Children and Youth
- SPED 505-3 Organizing and Implementing Early Childhood Special Education Programs
- SPED 512-3 Advanced Child and Family Assessment, Curriculum Methods and Evaluation
- SPED 594d-3 Practicum-Early Childhood Special Education

Electives

6 hours of approved graduate level coursework

Total Hours: 30 credit hours

NOTE: Students seeking Illinois state approval in Early Childhood Special Education must complete the following course work in conjunction with their other Masters program requirements: SPED 300/420, SPED 405, SPED 412, C&I 413, and C&I 419.

SUPERVISORY

Students seeking a supervisory certificate are required to be certified in special education and have a minimum of two years of special education teaching experience.

Program Requirements

- SPED 500-3 Research Issues in Special Education
- SPED 578-3 Legal Framework for Special Education
- SPED 599A-3 Thesis or SPED 599B-3 Research Paper

Specialization Requirements

- SPED 513-3 Organization, Administration, and Supervision in Special Education
- SPED 514-3 Simulation of Administrative Tasks in Special Education
- SPED 515-3 Collaborative-Based Systems in Special Education
- SPED 550-3 Behavior Management of Exceptional Children and Youth
- SPED 594e-3 Practicum in Special Education-Supervision

Electives

6 hours of approved graduate level coursework.

Total Hours: 30 hours

NOTE: Students seeking supervisory certificate must hold a Master's degree, Learning Behavior Specialist I certificate, and have documentation of a minimum of two years of special education teaching experience.

Individuals seeking a supervisory certificate will provide an official transcript documenting the Master's degree, a copy of Learning Behavior Specialist I certificate, evidence of successful completion of the Basic Skills Test and a letter from a supervisor documenting the two years of special education teaching experience. Students seeking the Supervisory Certificate may apply for admission to the certificate program in conjunction with their application for the Masters program.

Specialization Options

Applicants who hold an Illinois Learning Behavior Specialist I teaching certificate and who are seeking professional advancement or certification may apply for the Learning Behavior Specialist II (LBS II) certificate in one or more of the following areas: Behavior Intervention Specialist, Curriculum Adaptations Specialist, or Multiple Disabilities Specialist. The LBS II certificate may be earned concurrently with the MSED degree or without a Masters degree.

Applicants for LBS II certificates must submit a copy of their LBS I certificate and copy of their test scores indicating successful completion of the Basic Skills Test with their application materials.

BEHAVIOR INTERVENTION SPECIALIST

Program Requirements

- SPED 500-3 Research Issues in Special Education
- SPED 578-3 Legal Framework for Special Education
- SPED 599A-3 Thesis or SPED 599B-3 Research Paper

Specialization Requirements

- REHAB 503 -3 Applied Behavior Analysis
- SPED 517-3 Systems of Care for Exceptional Children and Youth
- SPED 550-3 Behavior Management of Exceptional Children and Youth
- SPED 501-3 Methods and Materials for Persons with Severe Behavior Challenges
- SPED 594a-3 Practicum in Special Education-Behavior Intervention

Electives

6 hours of approved graduate level coursework

Total Hours: 30 credit hours

For students who hold a Learning Behavior Specialist I, successful completion of the specialization requirements will entitle an individual to qualify for the Learning Behavior Specialist II Behavior Intervention Specialist certificate.

CURRICULUM ADAPTATION SPECIALIST

Program Requirements:

- SPED 500-3 Research Issues in Special Education
- SPED 578-3 Legal Framework for Special Education
- SPED 599A-3 Thesis or SPED 599B-3 Research Paper

Specialization Requirements

- SPED 515-3 Collaborative Based Delivery Systems in Special Education

- SPED 511A-3 Advanced Instructional Design and Methodology for Students with Disabilities
- SPED 511B-3 Curriculum for Instructional Remediation of Learners with Disabilities
- SPED 516-3 Advanced Assessment for Diverse Learners
- SPED 594b-3 Practicum in Special Education-Curriculum Adaptation

Electives

6 hours of approved graduate level coursework

Total Hours: 30 credit hours

For students who hold a Learning Behavior Specialist I, successful completion of the specialization requirements will entitle an individual to qualify for the Learning Behavior Specialist II Curriculum Adaptation Specialist certificate.

MULTIPLE DISABILITIESProgram Requirements

- SPED 500-3 Research Issues in Special Education
- SPED 578-3 Legal Framework for Special Education
- SPED 599A-3 Thesis or SPED 599B-3 Research Paper

Specialization Requirements

- SPED 421-3 Methods and Materials for Teaching Children and Youth Labeled Moderately and Severely Disabled
- SPED 431-3 Work-Study Programs for Adolescents Labeled Severely Disabled
- SPED 501-3 Methods and Materials for Persons with Severe Behavior Challenges
- SPED 517-3 Systems of Care for Exceptional Children and Youth
- SPED 594c-3 Practicum in Special Education-Multiple Disabilities

Electives

6 hours of approved graduate level coursework

Total Hours: 30 credit hours

For students who hold a Learning Behavior Specialist I, completion of the specialization requirements will entitle an individual to qualify for the Learning Behavior Specialist II Multiple Disabilities Specialist certificate.

Retention Criteria

For a student to be retained in the Masters program and/or certification program, students must complete all coursework with minimum grade of C and demonstrate acceptable professional behaviors which the faculty deem essential for competent and effective educators, and which are articulated in the Council for Exceptional Children Code of Ethics and Standards for Professional Practice for Special Educators.

Application Procedures

Applicants must submit all of the following items to be considered for admission to the Master's program in Special Education

1. Graduate School Application.
2. Official Transcripts. Official transcripts of all previous undergraduate and graduate college work at institutions other than SIUC should be sent directly to the Graduate Secretary, Department of Educational Psychology and Special Education, Southern Illinois University at Carbondale, Carbondale, IL 62901-4618.
3. Department Application Form. This form includes pertinent biographical information and professional experience. Applicants are requested to indicate their desired course of study and certificates (e.g., Supervisory, Early Childhood Special Education approval, LBS II certificates).
4. Letter of Application (approximately 400 words) in which the applicant summarizes professional goals, including career objectives, research interests, motivation for graduate work, and other pertinent information.
5. Letter of Recommendation. Applicants must submit at least two letters of reference which attest to your professional competence, academic preparation, and potential for graduate work. Ideally, one letter should be from a college or university professor who can discuss your academic abilities, and one should be from an administrator or colleague who can authoritatively describe your professional experience and potential.
6. Application Fee. A non-refundable application fee of \$50.00 must be submitted with the application. Attach your check or money order, payable to Southern Illinois University, to the top of the application form. Do not send cash. Only checks or money orders payable to United States banks will be accepted.
7. Optional Materials. Applicants are free to submit other materials which will substantiate your qualifications for admission for graduate study.

Doctor of Philosophy Degree in Education

The Department of Educational Psychology and Special Education offers programs leading to the Master of Science and the Doctorate of Philosophy. At the Ph.D. level, the Department of Educational Psychology and Special Education conforms to the doctoral program in education. The program concentration is in Educational Psychology, with a specialty in Special Education. Inquiries regarding application should be directed to the chair. See the description of the Ph.D. degree in education.

Courses (SPED)

403-3 Characteristics of Children and Youth Labeled Gifted. Designed to help teachers in the identification of and programming for children labeled gifted and talented. Prerequisite: 300 or concurrent enrollment or consent of department chair.

405-3 Introduction to Early Childhood Special Education Methods: Infants, Toddlers and Preschoolers with Special Needs. This course focuses on effective methods, materials and programs for infants, toddlers, and preschoolers with special needs, including IEPs, IFSPs, working with families, service delivery, case-management, transition planning, and curriculum methods and procedures. Prerequisite: 412 or consent of instructor.

408-3 Integrating Children and Youth with Disabilities in Normalized Environments. For regular education and related service personnel who provide services for children and youth with a disability. This course focuses on providing an understanding of essential characteristics and methods required to provide an appropriate education for students with disabilities.

409-1 to 6 Cross-Cultural Studies. Seminar and/or directed independent study concerned with socio-cultural variables affecting the educational needs of children and youth with a disability. Prerequisite: 300 or consent of instructor and department chair.

410-3 Characteristics of Students with Learning Disabilities, Emotional/Behavior Disorders, and Mental Retardation. This course presents the behavioral, emotional, physical and learning characteristics of children and youth labeled learning disabilities, emotional/behavior disorders or mental retardation. Screening, identification, placement, instructional practices, classroom management and use of related services will be examined. Prerequisite: 300 or 420, or concurrent enrollment.

411-3 Assessment in Special Education. Course covers general assessment information, norm reference testing, curriculum based assessment, adaptive behavior scales and issues relating to cultural diversity. Laboratory fee: \$15. Prerequisite: 300 or 420, 407 or 410, or concurrent enrollment.

412-3 Introduction to Assessment and Curriculum Methods in Early Childhood Special Education. This course presents an introduction to child and family assessment and the development of child and family goals in early childhood special education. Topics will include types of assessment commonly used, rationale for assessment, methods of assessment, reporting assessment results, writing child and family goals. A fee for testing materials is required. Lab fee: \$15. Prerequisite: 300 or 420, concurrent enrollment or consent of instructor.

417-3 Behavior Management for Children and Youth with Disabilities. The course focuses on the implementation of behavior management strategies and tactics to be used with students with disabilities in a variety of educational environments. Prerequisite: 300 or 420, 410,

411, 423 and must be admitted to the TEP as a special education major, or consent of instructor.

418-3 Methods and Materials for Teaching a Functional Curriculum. This course covers the principles of curriculum construction, program development and evaluation, classroom organization, instructional approaches, strategies and materials for teaching a functional curriculum. Prerequisite: 300 or 420, 410, and 423, and must be admitted to TEP as a special education major or consent of instructor.

419-3 Academic Methods and Materials for Students with Disabilities. This course covers the academic methods, materials and strategies used with students with disabilities receiving special education services in school and community settings. Prerequisite: 300 or 420, 410, 411, 423 and must be admitted to TEP as a special education major.

420-3 Advanced Theories and Practices in Special Education. The course is an advanced survey of exceptional populations and addresses educational, social, legal, cultural and community practices associated with individuals with disabilities, ages 0 – 21 years old.

421-3 Methods and Materials for Teaching Children and Youth with Multiple Disabilities. This course focuses on developing knowledge and skills for providing instruction and specialized teaching methods to students with moderate and severe disabilities with a focus on academic, personal, vocational and recreation and leisure domains related to functional outcomes.

422-3 Teaching Reading in the Elementary School. (Same as Curriculum and Instruction 422) Examination of the reading process with emphasis on the factors and conditions that affect reading. Emphasis on the formulation of a philosophy of reading and its implications in relation to methods, materials, organizational procedures, and evaluation. Prerequisite: Elementary education major – grade of C or better in Curriculum and Instruction 321 and 435 and Education 310 or consent of instructor; Special Education majors: admission to the Teacher Education Program.

423-3 General Procedures in Special Education. Presents key provisions of Public Law 94-142 and subsequent amendments, including Individualized Education Programs (IEPs). Course content also includes principles of applied behavior analysis and effective instruction of students with disabilities. Prerequisite: 300, 401, 402, 411 or concurrent enrollment.

425-3 Home-School Coordination in Special Education. The course covers techniques used in parent interviews, conferences and referrals by school personnel; due process and procedural safeguards for parents and youth with disabilities. Prerequisite: Concurrent enrollment in 417 or 418 or 419, and must be admitted to the TEP as a special education major, or consent of instructor.

430-3 Secondary Programming for Students with Disabilities. Deals with modifications of and additions to

school programs to ensure that they are appropriate to the needs of adolescents with disabilities. Content includes coverage of remedial and compensatory program models, transition programming, career and vocational education. Prerequisite: 300 or 420, 312, 315, 410, 411, and must be admitted to the TEP as a special education major, or consent of instructor.

431-3 Work-Study Programs for Adolescents Labeled Severely Disabled. This course is designed to prepare educators and other human service professionals to assist adolescents and young adults with severe disabilities for community integrated employment options. Content will include community-referenced curriculum objectives, community-based instruction for employment and functional skill development.

494A-1 Practicum in Special Education Assessment. This course includes clinical experiences in public school and community settings in the selection, administration and interpretation of norm-referenced and curriculum-based assessments, adaptive behavior scales, behavior rating scales and checklists, and issues relating to cultural diversity. This course is to be taken concurrently with 411. Prerequisite 300 or 420, 410 and must be admitted to TEP as a special education major.

494B-1 Practicum in Special Education Functional Curriculum. This course includes clinical experiences in public school and community settings in planning, implementing and instructing a functional curriculum. This course is to be taken concurrently with 418. Prerequisite: 300 or 420, 410, 411, 423 and must be admitted to TEP as a special education major.

495-1 to 6 Internship in Special Education. An applied experience for students seeking certification in special education through alternative or subsequent certificate routes. Students will be required to complete a set of activities and prepare a number of products appropriate for the special education program and/or students with disabilities being served in the internship placement. Students will be expected to complete a portfolio of products to demonstrate professional competence. Prerequisite: consent of program coordinator.

500-3 Research Issues in Special Education. Students will study issues and research practices in special education and will learn how they both conduct research, translate research findings and develop practices in special education based on research outcomes. Prerequisite: consent of instructor.

501-3 Methods and Materials for Persons with Severe Behavior Challenges. Deals with methods, materials and instructional management practices common to the instruction and management of student experiencing severe behavioral challenges in the schools and in residential settings.

503-3 Educational Program Delivery for Gifted and Talented Students. Planning implementation and evaluation of differential educational programs for gifted

and talented students. Reviews historical through modern day approaches to the systematic delivery of educational services to exceptional populations. Evaluation methods for the expansion and refinement of gifted programming are planned. Prerequisite: 403.

505-3 Organizing and Implementing Early Childhood Special Education Programs. This course presents theoretical frameworks and current best practices involved in the development, implementation and evaluation of Early Childhood Special Education programs. Content will include discussion of models of teaming, ethical issues, interagency coordination, transition, mentoring and supervision.. Prerequisite: 300 or 420, 412, and 405.

511A-3 Advanced Instructional Design and Methodology for Students. Advanced study of evidence-based practices related to the development and delivery of effective educational programs for students with mild disabilities. Emphases will include instructional design, instructional strategies and techniques, include the use of technology to meet educational needs of students with mild disabilities.

511B-3 Curriculum for Instructional Remediation of Learners with Disabilities. Advanced study of curriculum and curricular approaches to meeting the educational needs of students with mild disabilities in special education and general education classrooms. Emphasis include academic and functional curriculum for basic skills and content areas, direct instruction and curriculum modifications and adaptations.

512-3 Advanced Child and Family Assessment, Curriculum Methods and Evaluation in Early Childhood Special Education. This course presents advanced coursework and practical experience in child and family assessment, development and selection of curricula and evaluation in Early Childhood Special Education. Students will review current assessment, and curricula packages, conduct evaluations, and write assessment reports. Practical experience will be an integral part of this course. Prerequisite: 300, 405, 412, or concurrent enrollment. Special approval needed from instructor and chair.

513-3 Organization, Administration, and Supervision in Special Education. Emphasis upon the functions, underlying principles and cautions to be observed in the organization and administration of special education. The selecting and training of teachers, problems of supervision, special equipment, transportation, cooperating agencies and legal aspects of the problem. Prerequisite: 300 or 420. Special approval needed from program coordinator.

514-3 Simulation of Administrative Tasks in Special Education. Development of skills required of special education administrators and supervisors through the use of simulation materials focusing on developing administrative skills. Prerequisite: 300 or 420. Special approval needed from program coordinator.

515-3 Collaboration-Based Delivery Systems in Special Education. Designed to provide students with a thorough knowledge and skill base in the collaboration process including problem-solving processes, communication skills and conflict resolution skills. Collaboration-based approaches will be examined as alternative systems and methods of meeting the educational needs of students with disabilities within a continuum of special education services.

516-3 Advanced Assessment for Diverse Learners. Develop practitioner's knowledge and skills to develop and implement standardized and informal assessment systems to guide program planning and instructional decision-making for students with disabilities in regular and special education programs. Furthermore, practitioners will identify, utilize, and implement modifications and accommodations to facilitate students' performance on informal and standardized assessment tools. Prerequisite: 411. Special approval needed from instructor.

517-3 Systems of Care for Exceptional Children and Youth. Survey and examination of social agencies and models of service delivery contributing to the welfare and care of exceptional children and youth. Emphasis will be given to models, services, and organization of system of care serving youth with disabilities.

518-1 to 6 Workshop in Special Education. Topical workshops centered on current practices and new developments in special education. Designed to promote better understanding of the psychological and educational problems of exceptional children. Open to graduate students majoring in education and related fields. Special approval needed from the instructor and department chair.

519-3 Career Development Opportunities for Educationally Handicapped Youth. This course is designed to prepare special educators to understand the career needs of the educationally handicapped youth and the procedures for developing appropriate career services for such students. Prerequisite: 430.

550-3 Behavior Management of Exceptional Children and Youth. The course deals with assessment, implementation, and monitoring procedures involved with the use of behavior change techniques in special education programming. Emphasis will be placed on the actual implementation of behavior change techniques with school aged students with disabilities. Special approval needed from the instructor.

560-2 Inservice Delivery. Covers theoretical and practical aspects of inservice delivery/staff development. Special focus on organizing inservice programs, delivery techniques, consultative skills development, select inservice models, needs assessment and evaluative techniques. Prerequisite: Curriculum and Instruction 483 or consent of instructor.

578-3 Legal Framework for Special Education Services. Covers state and federal statutes and regulations including IDEA, Section 504: The Rehabilitation Act of 1973, and No

Child Left Behind Act, as well as current legislation and litigation with respect to provision of educational services for children and youth/young adults with disabilities. Prerequisite: SPED 300 or 420 or consent of instructor.

580-3 Master's Seminar: Issues and Trends in Special Education. Analysis of research, trends, and programs in the education of handicapped children. Open to graduate students in special education only. Prerequisite: 300, consent of instructor and department chair.

582-3 Post-Master's Seminar: Theories and Models in Special Education. Critical discussion of eight major intervention models used historically and currently with handicapped children in educational settings. Prerequisite: consent of instructor.

583-3 Post-Master's Seminar: Program Coordination in Special Education. Analysis of organizational principles and practices required for the creation and maintenance of programs to meet the needs of persons who are handicapped and require specialized educational programs within the school setting. Prerequisite: consent of instructor.

584-3 Doctoral Seminar: Research in Special Education. An analysis of purposes, approaches, design, methodology, and applications of experimental studies of handicapping conditions, as they relate to special education. Prerequisite: 582, 583.

585-3 Doctoral Seminar: Evaluation in Special Education. An analysis of the purposes, approaches, design, methodology and applications of evaluative studies in special education. Prerequisite: 582, 583.

586-1 to 4 (1,1,1,1) Proseminar in Special Education. A topical seminar providing for the systematic discussion of current research in the field of special education. Specific content is determined by participating faculty and students, relative to current faculty research and dissertations in progress within the department. Doctoral students will register for a total of four credit hours, one per semester, after which they will audit the course during the pursuit of their dissertation. Master's students admitted with consent of adviser and department chair.

590-1 to 6 Readings in Special Education. Study of a highly specific problem area in the education of exceptional children. Open only to graduate students. Graded *S/U* only. Prerequisite: 400, consent of instructor.

591-1 to 6 Independent Investigation. A field study for graduate students. Conducted in a school system where full cooperation is extended. The study will involve selection of a problem, surveying pertinent literature, development of experimental design and procedures, recording results and appropriate interpretations and summaries. Prerequisite: consent of instructor.

594-1 to 6 Practicum in Special Education. A capstone field-based experience for special educators seeking advanced preparation in the field of special education. Practicum experience include (a) behavior interventions, (b) curriculum adaptation, (c) multiple disabilities, (d) early

childhood special education, (e) supervision. Student will select the appropriate practicum experience as appropriate for his/her program of study or Learning Behavior Specialist II certification.

595-1 to 12 (1 to 6) Internship. The doctoral internship is a required experience. Internship hours do not apply to minimum needed for graduation. Each student shall engage in specialized service areas within a school system, university, state office, federal office, or private agency. Internship assignments include: (a) Research and applied studies; (b) Evaluation; (c) Administration; (d) University teaching; (e) Program planning and management; (f) Supervision; and (g) Specialized delivery systems. Interns will participate in regularly scheduled on-campus or on-site seminars with the university and field internship supervisors.

599A-1 to 6 Thesis. Independent hours to be taken under the supervision of the student's Master's degree chair for the purpose of conducting and writing the Master's thesis. Graded S/U only. Prerequisite: consent of instructor.

599B-1 to 6 Research Paper. Independent hours to be taken under the supervision of the student's Master degree chair for the purpose of conducting and writing the Master's research paper. Graded S/U only. Prerequisite: consent of instructor.

600-1 to 32 (1 to 12 per semester) Dissertation. Prerequisite: consent of chair.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

SPEECH COMMUNICATION

<http://speechcommunication.siu.edu/>
spcmdept@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Bardhan, Nilanjana, Associate Professor, Ph.D., University of Ohio, 1998; 1998. Public relations and intercultural communication.

Crow, Bryan, Associate Professor, Ph.D., University of Iowa, 1982; 1981. Interpersonal communication, conversation analysis, media studies.

Daughton, Suzanne, Associate Professor, Ph.D., University of Texas-Austin, 1991; 1990. Rhetorical theory and criticism.

Gingrich-Philbrook, Craig, Associate Professor, Ph.D., Southern Illinois University, 1994; 1998. Performance studies, queer theory, continental philosophy, performance art.

Gray, Jonathan M., Associate Professor, Ph.D., Louisiana State University, 1999; 1999. Rhetorical theory and criticism, popular culture, communication pedagogy, folklore, cultural studies, and performance.

Griffin, Rachel A., Assistant Professor, Ph.D., University of Denver, 2008; 2008. Intercultural communication, critical race theory, critical pedagogy, gendered violence.

Hinchcliff-Pelias, Mary, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1982; 1983.

Kleinau, Marion L., Professor, *Emeritus*, Ph.D., University of Wisconsin, 1961; 1959.

Kleinau, Marvin D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1977; 1963.

Langsdorf, Lenore, Professor, *Emeritus*, Ph.D., State University of New York at Stonybrook, 1977; 1990.

Lanigan, Richard L., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1969; 1974.

Pace, Thomas J., Professor, *Emeritus*, Ph.D., University of Denver, 1957; 1965.

Pelias, Ronald J., Professor, Ph.D., University of Illinois, 1979; 1981. Performance studies, performance methods, autoethnography.

Pineau, Elyse, Associate Professor, Ph.D., Northwestern University, 1990; 1990. Women's autobiography and personal narratives in performance.

Singer, Ross, Assistant Professor, Ph.D., Bowling Green State University, 2008; 2008. Organizational rhetoric, rhetorical theory and criticism.

Smith, William D., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1964; 1961.

Sobre-Denton, Miriam, Assistant Professor, Ph.D., Arizona State University, 2009; 2009. Intercultural communication, language and culture, qualitative methods, interpersonal communication.

Stucky, Nathan, Professor, *Chair*, Ph.D., University of Texas-Austin, 1988; 1990. Performance studies, staging literature, conversation analysis, performance ethnography.

Toyosaki, Satoshi, Assistant Professor, Ph.D. Southern Illinois University Carbondale, 2005; 2008. Intercultural communication, critical cultural studies, communication pedagogy, identity performance, cultural methodologies.

Warren, John T., Associate Professor, Ph.D., Southern Illinois University, 2001; 2006. Communication pedagogy, whiteness studies, communication theory, communication and culture, ethnographic methods.

The Department of Speech Communication has a healthy diversity of outlooks and approaches. Nevertheless our diversity has not prevented the development of an exceptionally supportive interpersonal climate. While we argue about a great many issues, we are committed as colleagues to effective teaching and productive scholarship. We believe that our students share these commitments, and we are most anxious to recruit students who want to study in such an environment.

Our facilities include a superior laboratory for performance studies, the Marion Kleinau Theatre, computer terminal laboratory room, video tape laboratory, library, and research carrels all housed in the department. We offer graduate assistants the opportunity for independent teaching experiences as well as the usual support duties as teaching and research assistants.

Financial Assistance

There are several forms of financial assistance available to graduate students in the Department of Speech Communication. First, there are graduate fellowships awarded on the basis of superior scholarship, which require a ten-hour per week research assignment. Second, there are several special fellowships offered annually to students who show promise of success in graduate studies even though their academic records have been only average because of economic or social disadvantages. These special fellowships also have a ten-hour per week research assignment. Third, there are graduate assistantships available which require up to 20 hours per week of service in teaching or research. Finally, there are dissertation research awards for students in their final year of work toward the Ph.D. degree.

The stipends for the above awards are competitive. All the appointments, fellowships and assistantships also in-

clude a waiver of tuition (both in-state and out-of-state) for the student, although the student is responsible for student fees. Students who hold assistantship appointments for 2 consecutive semesters also receive a tuition waiver for the following summer session.

Applications for financial assistance may be obtained by writing: Director of Graduate Studies, Department of Speech Communication, Mail Code 6605, 1100 Lincoln Drive, Southern Illinois University Carbondale, Carbondale, Illinois 62901-6605. Completed applications for fellowships should be received by January 15 for appointment during the subsequent fall semester. Applications for fall semester assistantships should be received by February 1.

The Department of Speech Communication offers two graduate programs of instruction and research in the discipline of human communication leading respectively to the Master of Arts, and Doctor of Philosophy degrees.

Curriculum. The graduate faculty of the department offers course work in communication education, interpersonal communication, philosophy of communication, performance studies, intercultural communication, semiotics, ethnography, conversation analysis, communication and gender, cultural studies, organizational communication and public relations, political communication, and rhetoric and public address.

Admissions. Applicants must meet the minimum requirements of the Graduate School and should have completed a minimum of 24 quarter or 16 semester credit hours in speech communication or related subjects. A program for remedying deficiencies in background can be arranged upon petition to the graduate committee of the Department of Speech Communication. In some instances applicants will be accepted for direct entry from the baccalaureate to the doctoral program when the graduate committee identifies high achievement and potential in the applicant's undergraduate work.

Application for admission to graduate studies in speech communication should be directed to the director of graduate studies of the Department of Speech Communication. The GRE Aptitude Test is required as a condition for admission. Except for persons from English-speaking countries, international students are required by the department to have a TOEFL score of 600 (paper score) or 250 (computer score), or higher for admission. Each applicant should submit to the Department of Speech Communication three letters of recommendation from former instructors, the Graduate School application form, and a departmental application form indicating professional and personal objectives. In addition, applicants for the Ph.D. degree program may furnish a thesis or research paper as evidence of research and writing ability.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Speech Communication. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must

pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Acceptance for graduate study in speech communication is determined by the graduate committee of the Department of Speech Communication. Students who are awarded graduate assistantships to provide assistance in the instruction of the department are required to take SPCM 539.

Research Style. Each student is required to write a research report, thesis, or dissertation as a requirement of the program. In all cases the writing must conform to the latest edition of *The MLA Style Manual* or the *APA Publication Manual*. In all cases the writing must conform to the current edition of the Graduate School *Guidelines for the Preparation of Research Reports, Theses, and Dissertations*.

Master's Degree Program

A minimum of 30 semester credit hours is required for the M.A. degree. At least 15 of these hours must be at the 500 level. A student who completes only the minimum of 30 hours of work may devote no more than 9 hours to work outside the Department of Speech Communication.

The individual student selects or is assigned a faculty adviser no later than the beginning of the second semester. The faculty adviser and the student will plan the program of study.

The requirements for the master's degree may be met by either of the following plans chosen by the student in consultation with the adviser.

Plan 1: Thesis. Each student must complete a minimum of 30 semester credit hours, with no more than 6 hours or fewer than 3 hours of thesis credit in SPCM 599 counted toward the 30 hour minimum. In addition, the student must register for at least one semester hour of credit in SPCM 599 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the thesis. If the student's reliance upon faculty assistance justifies, the director may require an appropriately greater number of semester hours in SPCM 599. The thesis is submitted to a committee of 3 members of the graduate faculty, at least 2 of whom must be from the Department of Speech Communication. The committee must approve the prospectus and will administer an oral examination over the thesis. Students are required to submit 2 copies of the thesis to the Graduate School, one copy to the Department of Speech Communication, and one copy to the thesis director.

Plan 2: Research Report. Each student must complete a minimum of 30 semester credit hours, with no more than 3 hours or fewer than 1 hour of research report credit in SPCM 595 counted toward the 30 hours minimum. A research report is submitted as evidence of research competence. An advisory committee consisting of the student's adviser and one other member of the graduate faculty in the Department of Speech Communication selected by the student and the adviser, will administer an oral examination

over the research report before it is submitted to the Graduate School. One copy of the research report is submitted to the Graduate School, one copy to the Department of Speech Communication, and one copy to the adviser.

A student must have a graduate grade point average of 3.00 in order to be eligible for the master's degree.

Doctor of Philosophy Degree

A student must take 51 semester credit hours of course work beyond the master's degree, 9 hours of which are methodology (tool) courses. A minimum of 36 of those 51 hours must be taken within the department. In addition, 24 semester credit hours of dissertation work are required for the Ph.D. degree. Course work outside the department must be germane to one of the departmental curriculum areas for purposes of examination and dissertation research. Throughout the program of study, the student must maintain a 3.00 grade point average in all work taken. If the grade point average drops below the minimum, the student is placed on academic warning for the following two semesters.

During the last half of the second semester of course work, the student's progress shall be reviewed by the advisory committee to determine continuation, change, or termination of the program. The advisory committee for each student shall be responsible for assembling the necessary information (grades, recommendations, progress in curriculum areas, etc.) for consideration in reaching the above decision.

Advisory Committee. A 3 person advisory committee shall be established no later than the beginning of the second semester of graduate study to plan the program of study with each student. The chair of the committee shall act as the primary adviser and sign the graduate course request form. This advisory committee is responsible for certifying to the graduate director that the student has met all de-

partmental requirements for admission to candidacy and has passed the Ph.D. preliminary examination.

The advisory committee and the student will plan the program of study. All students are required to take SPCM 501, Introduction to Speech Communication Research and SPCM 510, Rhetorical Theory. Students selecting theater as a curriculum area must take 18 hours of speech communication courses including SPCM 501 and 510; and THEA 501, THEA 504, and THEA 505.

Attendance is required at proseminars as part of professional development. Graduate students are encouraged to present their scholarly work.

Preliminary Examination. The student must pass a preliminary examination on his/her program of study. The preparation and administration of the examination are determined by the advisory committee in consultation with the student. The examination is taken at the end of the course work.

Dissertation. Each student must register for at least 24 semester hours of dissertation credit in SPCM 600 or THEA 600. In addition, the student must register for at least one semester hour of credit in SPCM 600 or SPCM 601 or THEA 600 or THEA 601 during any academic term in which the services of any faculty member are utilized in the supervision of or consultation concerning the dissertation. If the student's reliance upon faculty assistance justifies, he/she may be required by the dissertation adviser to register for an appropriately greater number of semester hours.

The dissertation director shall, upon consultation with the student, be responsible for setting up a dissertation committee, supervising the dissertation, and administering the final oral examination. The dissertation committee shall approve the dissertation prospectus and pass upon the completed dissertation and oral examination. Students are required to submit two copies of the dissertation to the Graduate School, one copy to the Department of Speech Communication, and one copy to the dissertation director.

Courses (SPCM)

401-3 Communication Theories and Models. An advanced examination of the purposes and processes of constructing and using theories and models in communication research. Students critically analyze existing communication theories from both social scientific and interpretive paradigms in order to explicate and evaluate their implicit and explicit assumptions about human being, knowledge, and value. For graduate students and advanced undergraduates. Satisfies the CoLA Writing-Across-the-Curriculum requirement for speech communication majors. Prerequisite: 230 for undergraduates.

411-3 Rhetorical Criticism. Designed to develop the student's ability to criticize public discourse, including speeches, written works, and the mass media. Satisfies the CoLA Writing-Across-the-Curriculum requirement for Speech Communication majors.

412-3 Environmental Rhetoric. A exploration of rhetorical structures and strategies in environmental policy, activism and public discourse. This course will trace the significant contributions rhetoric and public debate have made in the struggle to protect environments from excessive industrial and commercial exploitation. A lecture, reading and discussion course.

415-6 (3,3) Topics in Gender, Sexuality & Communication (same as WMST 415). An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary. Prerequisite: consent of instructor.

421-3 to 9 (3,3,3) Studies in Public Address. Critical studies of speakers and issues relevant to social and political movements dominant in national and international affairs. A lecture, reading and discussion course. Students may repeat enrollment to a total of nine hours.

435-3 to 6 (3,3) Topics in Performance Studies. An exploration of advanced theories and techniques for performance studies. Topics vary and are announced in advance. Students may repeat enrollment in the course, since the topics change. Lecture, discussion, class projects.

440-3 Language, Culture, and Communication. Study of language in use in social interactions in various cultural and communicative contexts. Topics include components of language, language change and diversity, speech acts, conversational structure, dialects, gender and language, bilingual and multilingual cultures, child language acquisition, and language use in institutional contexts. Prerequisite: 301i or 341 or consent of instructor.

441-3 Intercultural Communication. Application of semiotic and cultural theories to language behavior. Emphasis on speech communication as an approach to the study of intercultural communication. Prerequisite: 341 or consent of instructor.

442-3 Psychology of Human Communication. Nature, development, and functions of verbal and nonverbal behavior; application of psychology theories and research to the communication process in individuals and groups. Emphasis on the systemic nature of communicative behavior.

443-3 General Semantics. Formulations from the works of Alfred Korzybski and from neo-Korzybskian interpreters are presented. General semantics is discussed as an interdisciplinary approach to knowledge. Relationships are made to contemporary problems in human affairs.

444-3 Studies in Language Acquisition. Research in and theories of the development of verbal and nonverbal language with attention to the maturational process. Includes investigation of social, phonological, syntactical and semantic correlates of communication development. Appropriate for advanced students interested in working with or conducting research involving children.

445-3 Conversational Performance. Analysis of performance acts within everyday interaction: stories, jokes, laughter, teasing, etc. Application of theories of play, metacommunication and framing. Re-performance of recorded, transcribed conversations as method of exploring aesthetic dimensions of communication. Prerequisite: nine hours of Speech Communication courses or consent of instructor.

446-3 Sociology of Language Discourse and Signs. Introduction to sociological semiotics, especially structuralism and post-structuralism. Reference to French theorists such as Barthes, Baudrillard, Bourdieu, Certeau, Deleuze and Guattari, Greimas, Group Mu, Lacan, Lyotard and Perelman. Emphasis on the practice of discourse, language, and signs as a model for research in the human science of communicology.

448-3 Intercultural Training. Introduction to communication theories and practices informing the training of individuals and groups anticipating extensive interactions with persons from differing cultural communities. The course provides content and learning opportunities aimed toward the design, development, and evaluation of effective, ethical culture-specific and culture-general intercultural training programs. Prerequisite: 341 or 301i or consent of instructor.

451-3 Political Communication. (Same as Political Science 418.) A critical review of theory and research which relate to the influence of communication variables on political values, attitudes and behavior. Prerequisite: 358 or consent of instructor.

452-3 Interpersonal Communication and the Mass Media. A review, synthesis and analysis of communication theory and research which deals with the process, interactive nature of interpersonal and mass channels of communication. Prerequisite: 401 or consent of instructor.

460-3 Small Group Communication: Theory and Research. A critical examination of small group theory and research in speech communication. Emphasis is given to the development of principles of effective communication and decision-making in the small, task-oriented groups. Prerequisite: 261 or consent of instructor.

461-3 Laboratory in Interpersonal Communication I. Interpersonal communication is studied as human encounter. The philosophy and theoretical bases of existential phenomenological approaches to human communication are discussed. Projects are evolved by small groups that contribute to the understanding of human communication.

462-3 Laboratory in Interpersonal Communications II. Various theories of social and cultural change are explored. The role of interpersonal communication in the development of human consciousness is explicated. Projects are evolved by small groups that examine values and priorities of human nature and cultural nature.

463-3 Interpersonal Conflict. Study of sources, patterns and outcomes of conflict in interpersonal relationships. Emphasis on interactive, systems-level analysis of naturally-occurring conflict episodes. Practice in managing conflicts, reframing, negotiation and mediation. Prerequisite: for undergraduates, 262 or consent of instructor.

464-3 Compassionate Communication. Study and practical training in Nonviolent Communication and similar approaches to more effective inter- and intrapersonal communication. Using real-life experiences from political encounter and interpersonal conflicts to inner dialogue, this class offers a way to deepen peaceful connection and understanding with ourselves and others through honesty, empathy, and being "fully present" in the moment. Prerequisite: consent of instructor.

465-3 Philosophy of Communication. An introduction to philosophical approaches to the study of communicative interaction. Topics include the relation of meaning and conceptual structures to bodily experience and the interpretative nature of communicative interaction.

470-3 Interdisciplinary Approaches to Environmental Issues. Application of concepts for the Biological, physical and social sciences, economics, humanities and law, are used to understand the interdisciplinary complexities of environmental issues. Students will develop and demonstrate problem-solving skills as a part of a team analyzing a regional environmental issue. Team-taught seminar style discussions. Prerequisite Plant Biology 301i and admission to Environmental Studies minor program

471-3 Prose Fiction in Performance. Study of prose fiction through analysis and individual performance. Satisfies the CoLA Writing-Across-the-Curriculum requirement for Speech Communication majors. Prerequisite: 370 or consent of instructor.

472-3 Poetry in Performance. The study of poetic form through analysis and performance. Prerequisite: 201, 370 or consent of instructor.

473-3 Performance Ethnography. An exploration of culture, ritual, narrative, community and personal identity as performance. Readings, field work, and assignments focus on performance ethnography, communicative dimensions of performance and performance epistemology. Prerequisite: six hours of performance studies or consent of instructor.

474-3 Staging Literature. Theory and practice of staging literary texts with emphasis on adaptation and directing. Prerequisite: 370 or 371 or consent of instructor.

475-3 to 6 (3,3) Production Texts and Contexts. Advanced study related to theoretical and practical issues in performance staging with special emphasis on textual production, scripting, social contexts and performance practices. May be repeated for a total of six hours. Prerequisite: six hours of performance studies courses or consent of instructor.

476-3 Writing as Performance. An examination of the practical and theoretical links between composition and performance. Lectures, reading and assignments focus on performance as a means and an end to creative writing. Satisfies the CoLA Writing-Across-the-Curriculum requirement for Speech Communication majors.

480-3 Dynamics of Organizational Communication. Introduction to interrelationships of communicative behavioral and attitudes with organizational policies, structures, outcomes. Uses case studies and role-plays to teach principles. Individual research into selected aspects of organizational communication. Prerequisite: 280 or consent of instructor.

481-3 Public Relations Cases and Campaigns. Advanced course in public relations case analysis and campaign planning. Students critique public relations campaigns created by various profit, nonprofit and agency organizations. Students also design and implement public relations campaigns from problem identification through evaluation stages. Satisfies the CoLA Writing-Across-the-Curriculum requirements for speech communication majors. Prerequisite: 381 and 382 with a grade of C or better or consent of instructor.

483-3 Studies in Organizational Communication. Study of communication systems and behaviors within organizations. Consideration of relevance of communication to management operations, employee morale, networks, superior-subordinate relations, production and organizational climates. Individual research into selected aspects of organizational communication. Prerequisite: 480 or consent of instructor.

490-1 to 6 Communication Practicum. A supervised experience using communication skills. Emphasis on the development of performance skills in the following areas:

(a) Communication pedagogy; (b) Debate; (c) Intercultural communication; (d) Interpersonal communication; (e) Organizational communication; (f) Performance studies; (g) Persuasive communication; (h) Public relations. May be repeated for credit. Undergraduates limited to a total of six hours from 390, 490 and 491 and graduate students to three to be counted toward degree requirements. Prerequisite: twelve hours of speech communication and consent of instructor.

492-2 to 8 Workshop in Performance Studies. Summer offering concentrating in specialized areas of performance studies. Prerequisite: 201 and 370 or consent of instructor.

493-3 to 9 (3,3,3) Special Topics in Communication. An exploration of selected current topics in communication arts and studies. Topics vary and are announced in advance; both students and faculty suggest ideas. Students may repeat enrollment in the course, as the topic varies.

501-3 Introduction to Speech Communication Research. Survey of research methods utilized in the discipline of speech communication. Discussion of these methods as they apply to the various subject matter typologies. Introduction to basic conventions of research investigation and reporting.

503-3 Communicology as a Human Science. Introduction to the human science approach (phenomenology) to theory construction in human communication. Examination of the modality conditions for evidence (actuality, possibility, necessity, sufficiency) and the corresponding logics (assert, problematic, apodictic, thematic) for qualitative research. Focus on the Abduction models of human communication and practice used by theorists such as Gregory Bateson, Paul Waltzlawick, Roman Jakobson, Charles S. Pierce, Maurice Merleau-Ponty and Michel Foucault.

504-3 Seminar: Empirical Phenomenological Communication Research. Review and analysis of the types of empirical phenomenological research and methods of capta/data collection relevant to the study of human communication. Prerequisite: 501 and 503.

505-3 Seminar: Semiotic Phenomenology and Critical-Cultural Research. Review, analysis, and application of eidetic and hermeneutic models for conducting interpretive research in the tradition of semiology and phenomenology. Focus on those qualitative approaches which use a critical-cultural context of investigation in the human sciences, especially communicology. Prerequisite: 503 and 504 or consent of instructor.

506-3 Ethnography of Communication. Survey of research literature and methods in the ethnography of communication, emphasizing description of communicative practices situated in particular cultural contexts. Course includes such topics as theoretical assumptions and genres of ethnographic writing.

507-3 Ethnographic Fieldwork. Advanced study of culturally distinctive patterns of communicative conduct in particular social settings, groups and/or communities. Emphasizes fieldwork methods (e.g., participant-observation, ethnographic fieldnotes, ethnographic interviews) and practice in the collection of data from which cultural patterns of communication can be formulated, including the analysis

and interpretation of such data. This course is based in the perspective of ethnography of communication.

508-3 Autoethnography. Survey of research literature and methods in autoethnography with particular emphasis on the communicative self as a way of studying and speaking about culture. Calling upon the evocative and self-reflexive, strategies for field work and scholarly representation are explored.

509-3 Interpretive/Critical Methodologies. Survey of methodological approaches that facilitate analysis of ways discourses constitute, perpetuate, and maintain particular meanings. Objective is to identify, explicate, and practice procedures for conducting interpretive/critical communication research. Prerequisite: 501 or consent of instructor.

510-3 Seminar: Rhetoric Theory. A survey of selected theories of rhetoric. Emphasis on major contributors of historical or contemporary importance.

513-3 to 9 (3,3,3) Studies in Rhetoric. An exploration of selected topics in the field of rhetoric. May be repeated with change of topic area. Topics announced prior to each offering. May be repeated up to nine hours.

515-3 to 9 (3,3,3) Communication and Gender. (Same as Women's Studies 515.) How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering.

526-3 Seminar: Studies in Persuasion. The study of persuasion in social-political contexts. Exploration of contemporary research and selected theories in persuasion. Examination of philosophical-ethical questions related to persuasion. Readings, research and discussions.

531-3-9 (3,3,3) Seminar: Communication Pedagogy. Advanced study of selected problems in communication pedagogy. Analysis of research problems and methodologies in communication pedagogy research. Topics may vary from year to year. May be repeated only if topic differs each time repeated.

533-3 Critical Communication Pedagogy. Advanced study of communication pedagogy research from a critical perspective. Foundations of critical communication pedagogy examined with special attention to current research trends, paradigmatic debates, and issues of culture and power.

535-3 Teaching as Performance. Survey of theoretical, methodological and instructional approaches to education that foreground performative ways of teaching and learning. The course provides content and learning opportunities aimed toward the development of critical, embodied and socially transformative pedagogies. Prerequisite: six hours of credit in either Communication Pedagogy or Performance Studies or consent of instructor.

537-3 Communication Pedagogy and Culture. Advanced study of communication pedagogy research from a critical/cultural perspective. Survey of research in communication pedagogy that examines culture, including such topics

as intercultural/multicultural education, cultural studies and communication, as well as feminist/queer pedagogies.

539-3 Speech Communication at University Level. Analysis and practice of instructional methods. Focus on the development of instructional skills with specific applications to teaching the basic college speech communication course.

540-3 Seminar: Language, Culture, and Semiology. Examination of communication problems and research focusing on the relation among cultural values, communication behaviors in the speech community, and social exchange. Emphasis on the semantics and pragmatics of intercultural communication and social semiotic systems. Prerequisite: 440 or 441 or consent of instructor.

541-3 to 9 (3,3,3) Studies in Intercultural Communication. Advanced study of selected topics in intercultural communication. May be repeated for a total of nine hours when topics vary. Prerequisite: consent of instructor.

543-3 Identity, Culture, and Communication. A theoretical exploration of identity performance across and in/between cultures. Draws mainly upon cultural studies, postcolonial theory, literary theory, critical globalization theory, and intercultural communication theory to provide a multidisciplinary understanding of how identity politics are negotiated in cultural contexts.

545-3 Seminar: Semiology and Semiotic Communication. Advanced study of sign, signal, and symbol systems in the phenomenology of communication. Systematic analysis of the metatheory relationship between expression and perception as manifest in verbal and nonverbal communication systems. Emphasis on semiology as a communication theory in the human sciences. Some consideration of related theories such as structuralism, interspecies communication, human/machine communication and general systems theory. Prerequisite: 440 or 441 or consent of instructor.

546-3 Conversation Analysis: Pragmatics. (Same as Linguistics 546.) Study of the pragmatics of everyday conversation: sequential organization, topical coherence, speech act rules and functions, contextual frames, and background understandings. Emphasis on observational research methods and analysis of original data. Prerequisite: consent of instructor.

547-3 Conversation Analysis: Ethnomethodology. (Same as Linguistics 547) Descriptive study of sequential organization of interaction. Students read research literature and learn methods for transcription analysis in the conversation analytic tradition. Topics include openings and closings, adjacency pair organization, turn taking, overlap, assessments, pre-sequences, repair, topic, non-vocal activities, response, laughter, storytelling, argument, play and institutional contexts. Prerequisite: consent of instructor.

551-3 Phenomenology Seminar I: French Communication. A critical examination of dominant problematics, thematic, and rhetoric in communication theory and praxis developed as a human science (*science humaine de communication*) by such contemporary French theorists as

Barthes, Bourdieu, Foucault, Merleau-Ponty, Perelman and Ricoeur. Prerequisite: 401 and 461 or consent of instructor.

552-3 to 9 (3,3,3) Phenomenology II: German Communicationology. Ways of studying human communication which derive their impetus, orientation, or construal of questions and answers, theories and methods, from the German intellectual (philosophical and social-scientific) tradition. Focus on (a) Hermeneutic phenomenology, (b) Frankfurt School critical theory, and (c) Phenomenological sociology/ethnomethodology. May be repeated with change of focus. Focus announced prior to each offering.

561-3 to 6 (3,3) Studies in Small Group Communication. Studies of group action, interaction and leadership designed to apply small group theory and communication theory. Emphasis on the nature of group communication as exemplified in the laboratory model or the discussion/conference model. Students may repeat enrollment to a total of six hours.

562-3 to 9 (3,3,3) Philosophy of Human Communication. (Same as Philosophy 562.) Study of selected topics in the philosophical study of communication. May be repeated with change in topic area. Topics announced prior to each offering.

563-3 Studies in Interpersonal Communication. An investigation of recent theories and empirical research concerning interpersonal communication. Emphasis will be placed on analyses of relational development, maintenance and change in the contexts of working relations, friendships and families. Both analytic and quantitative perspectives on interactional processes will be considered.

564-3 Family Communication. Survey of theories, research methods, and empirical studies of communication in family contexts. Emphasis is on describing functional family processes, including parent-child communication and sibling communication across the lifespan, and influences of various types of family structures on the social interactions that occur in families.

570-3 Performance Methodologies. The examination of performance methodologies for exploring human communication. Particular attention is given to generating and reporting performance knowledge. Prerequisite: nine hours of 400 level performance studies courses or consent of instructor.

571-3 History and Criticism in Performance Studies. A study of social and critical trends in performance studies with emphasis on their historical development. Prerequisite: nine hours of performance studies or consent of instructor.

572-3 Theory and Criticism in Performance Studies. A study of the theoretical trends in performance studies and literary criticism. Prerequisite: nine hours of performance studies or consent of instructor.

573-3 Performance Criticism. An examination of the theoretical and practical issues surrounding the evaluation of artistic performances for interpretation, rhetoric, theatre, journalism, film and television students interested in developing their critical skills. Prerequisite: consent of instructor.

574-3 to 6 (3,3) Studies in Performance. An exploration of selected current topics in the field of performance studies. May be repeated for a total of six hours. Prerequisite: twelve hours of performance studies courses or consent of instructor.

576-3 Performance Art. The study and creation of post-modern performance. Particular attention is given to performance artists in the theatrical tradition. Prerequisite: nine hours of performance studies or consent of instructor.

580-3 to 9 Issues in Organizational Communication and Public Relations. Advanced study and applications related to specific issues in (a) Organizational communication, (b) Public relations, and (c) Political communication. May be repeated with change of topic area. Topics announced prior to each offering. Prerequisite: consent of instructor.

593-1 to 3 Research Problems in Communication. Independent research study with a theoretical focus under the tutorial supervision of a member of the graduate faculty. Prerequisite: consent of instructor and departmental adviser.

595-1 to 3 Research Report. One to three hours required of all non-thesis students writing a research paper. Graded *S/U* or *DEF* only.

598-0 Proseminar in Human Communication. An open forum offered each semester for the systematic discussion of contemporary research in the field of communication arts and studies. Specific content is determined by participating faculty and students. Topics will usually be related to current faculty research or dissertations in progress in the department. Graded *S/U* only.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 36 (1 to 12 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

TEACHING ENGLISH TO SPEAKERS OF OTHER LANGUAGES

(See Linguistics for program description)

TELECOMMUNICATIONS

(See Mass Communication and Media Arts for program description)

THEATER

<http://www.theater.siu.edu/>
varns@siu.edu

COLLEGE OF LIBERAL ARTS

Graduate Faculty:

Fletcher, Anne, Associate Professor, Ph.D., Tufts University, 1992; 2001. Theater history, 20th century American political theater.

Holcombe, Robert, Associate Professor, M.F.A., Ohio University, 1999; 2000. Technical direction.

Kidd, Thomas J., Assistant Professor, and Director of Undergraduate Studies M.F.A., Southern Illinois University, Carbondale, 1999; 2004. Acting, directing.

Merrill-Fink, Lori, Associate Professor and *Director, University Honors Program*, M.F.A., University of Arizona, Tucson, 1988; 1988. Acting, voice, and movement.

Moe, Christian H., Professor, *Emeritus*, Ph.D., Cornell University, 1958; 1958.

Naversen, Ronald, Professor and *Director of Graduate Studies*, Ph.D., Southern Illinois University Carbondale, 1989; 1989. Scenic design.

Ojewuyi, Olusegun, Assistant Professor, M.F.A., Yale University, 1998; 2004. Acting, directing.

Patrick-Benson, Susan, Assistant Professor, M.F.A., Rutgers University, 1995; 2006. Voice specialist.

Rush, David, Professor, Ph.D., University of Illinois, 1973; 1996. Playwriting, criticism, theory.

Varns, Mark, Professor and *Chair*, M.F.A., University of Missouri-Kansas City, 1990; 1996. Technical direction, lighting design.

Zea, Wendi, Assistant Professor M.F.A Kent State University, 2006; 2009 Costume Design.

The Department of Theater is an accredited institutional member of the National Association of Schools of Theatre, 11250 Roger Bacon Drive, Suite 21, Reston, Virginia 20190.

The Department of Theater blends scholarship and practice in an academically based theater experience that provides students with broad based exposure to human experience and a sound foundation in the skills of theater craft. The course of study in history, theory and criticism in all areas of theater is complimented by a production program that reinforces both approaches to theater, creating work that is as imaginative and highly polished as possible. Graduates will be able to apply their knowledge of performance, production, theater history, contemporary practice, literature and theory in a wide variety of theater venues. Graduates will also be able to demonstrate intrapersonal and interpersonal skills in the form of leadership qualities, self discipline, creative expression, critical thinking, and the ability to work effectively as a part of a collaborative team. The development and guidance of talent and discipline, both characteristic of the artist/scholar, are the goals of the Department of Theater.

The Department of Theater maintains two theaters for public productions: the McLeod Theater, a proscenium stage seating approximately 500, and the Christian H. Moe Laboratory Theater, a flexible stage seating up to 110. The playbill typically encompasses a balance of contemporary, classic, and original works, and offers seven productions including a musical and an opera during the academic year (the latter co-produced with the School of Music). The summer season, McLeod Summer Playhouse, consists of two musicals and a comedy operating as a professional summer stock company, offering stipends, and/or graduate credit.

The Department of Theater offers a graduate program of study leading to a Master of Fine Arts degree in theater. An interdisciplinary doctoral study in theater is sponsored by the Department of Speech Communication. Interested students should consult the description of the program under speech communication.

Admissions

To apply students must fill out two separate applications. The first is the online application to the Admissions to Graduate Study in Theater which is available at <http://www.siu.edu/gradschl/>. Applicants for graduate studies in theater must satisfy the minimum requirements of the Graduate School before being admitted to the department. The second application is directly to the Department of Theater, which requires the submission of a departmental application form, statement of purpose, transcripts from all undergraduate and graduate course work together with three (3) letters of recommendation from former teachers or supervisors. All forms should be requested from the director of graduate studies in theater.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Theater. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Although an undergraduate major in theater is not essential for admission to a graduate degree program in theater, the director of graduate studies may require that certain course deficiencies in undergraduate subject areas be remedied. These requirements are stated in writing on the admissions approval form.

There are additional requirements established by each of the three areas of study in the M.F.A. program. Applicants in the directing area are required to submit materials that are representative of their previous theater work and/or indicate an aptitude for stage direction (examples would include promptbooks, programs, reviews, photos, video tapes or casebooks from previous directing efforts. Alternatively, a detailed production plan for a play selected by the head of directing may be required). Directing students are also required to attend an on-campus interview and audition. At this time, each applicant will work with actors on a directing scene to demonstrate their ability to analyze the scene and work with actors. Applicants in the production design/technical areas are required to submit portfolio samples of their work. Applicants in the playwriting area must submit approximately 2 to 2 1/2 hours of written material consisting of one full-length plan and/or several significant short pieces. Please refer to the description of the program in Speech Communications for admission information to the Ph.D. program. Please note that the Department of Theater requires the submission of GRE scores as part of its admission requirement for the Ph.D. More detailed information about these requirements is obtainable from: Director of Graduate Studies, Department of Theater, Southern Illinois University Carbondale, Carbondale, IL 62901-6608, 618-453-5741.

Financial Assistance

There are several kinds of financial assistance available to graduate students in the Department of Theater. First, there are graduate fellowships awarded on the basis of superior scholarship. Second, special fellowships are offered annually to students who show promise of success in graduate studies although their academic records have been only average due to economic disadvantages. The fellowships have no service requirements. Third, graduate assistantships with competitive stipends are available to students who are employed in various academic support positions, such as teaching, researching, and production. All fellowships and assistantships include a waiver of tuition (both in-state and out-of-state). Applications for financial assistance may be obtained by writing to the director of graduate studies.

The Master of Fine Arts Degree Program

The Master of Fine Arts degree program in theater emphasizes practical expertise in one of the following areas: directing, playwriting and production design (separate emphases in scenic, lighting, costume design, and technical direction), a The department encourages interdisciplinary study in related fields including performance studies, dramatic literature, musical theatre and opera. In most instances, a minimum three-year residency is required of all M.F.A. students.

All M.F.A. students must complete a minimum of 60 semester hours of course work, including the M.F.A. degree core requirements:

THEA 500, 501	6 hours
THEA 520A, 520B	6 hours
Total M.F.A. core	12 hours

Besides the core requirements, the student will propose and successfully complete a project to qualify for further study in the chosen area. This project will be developed in concert with the student's committee consisting of three faculty members.

In addition, each of the three areas of study has specific area and elective requirements which are as follows.

Directing.

M.F.A. core	12 hours
Area requirements	43 hours
THEA 401 A	2 hours
THEA 401 B	1 hour
THEA 402	6 hours
THEA 411 A	3 hours
THEA 417	3 hours
THEA 502	12 hours
THEA 504 A	3 hours
THEA 504 B	3 hours
THEA 506	4 hours
THEA 599	6 hours
Electives (by advisement)	5 hours
Total:	60 hours

Production Design.

M.F.A. core	12 hours
Area requirements	29 hours
THEA 407, 414, 418, 419	9 of 12 hours
THEA 510	6 hours
THEA 516	8 hours
THEA 599	6 hours
Electives (by advisement)	19 hours
Total:	60 hours

Playwriting.

M.F.A. core	12 hours
Area requirements	40
THEA 402	3 hours
THEA 411 A	3 hours
THEA 411 B	3 hours
THEA 455	3 hours
THEA 503	3 hours
THEA 504	3 hours
THEA 505	3 hours
THEA 506	4 hours
THEA 511B	3 hours
THEA 525	3 hours
THEA 599	6 hours
Electives (by advisement)	8 hours
Total:	60 hours

Thesis requirements vary for each area of study; however, they include a research component as well as a description and evaluation of the student's creative project. In concert with the student's committee, the candidate may choose to separate the two, submitting an approved research paper during the first academic year and a creative thesis after completion of the M.F.A. final project.

The Department of Theater requires an oral examination, conducted by the student's thesis or dissertation committee, for each M.F.A. and Ph.D. degree candidate. The examination covers the thesis or dissertation, and may include questions designed to ascertain the student's general competence in theater.

Courses (THEA)

400-1 to 6 (1 to 2 per semester) Production. Practicum for support of major department productions in all areas. Roles in department productions may fulfill requirement.

401A-2 Stage Management. Study of the theories and skills required to successfully stage manage a theater production. Prerequisite: 217, 218a, concurrent enrollment in 401b and special approval needed from the instructor..

401B-1 Stage Management Lab. Practical application of the theories and skills learned in the 401a course and applied on a department of theater production. Prerequisite: 217, 218a, concurrent enrollment in 401a and special approval needed from the instructor.

402 3 to 6 (3,3) Directing Studio. Introduction to the art of directing through examination of various genres. An exploration of the fundamentals of directing culminating in scene work and studio presentation. Advanced students will approach the directing process from play selection through dramaturgy to production and through the context of contemporary directing styles. Prerequisites: junior standing; THEA 217 and 311A; or consent of instructor.

403A-3 Advanced Movement for the Actor. Advanced studies in stage movement with special attention to period styles. Prerequisite: 303a, 317a, b

403B-3 Advanced Voice for the Actor. Advanced studies in voice with special attention to stage dialects. Prerequisite: 303b, 317a.

404-3 Theater Management. Discussion of legal and financial aspects concerning the professional and community theaters of the United States. Consideration of and practice in managerial activities of an educational theater including administration, purchasing, accounting practices, direct sales, publicity, promotion and public relations.

405-1 Applied Theater. Explores the application of theatrical techniques in fields outside the traditional conception of theater, such as law, medicine, politics, communications. Students will have the opportunity to explore practical applications.

406-9 (3,3,3) Properties Studio. Beginning and advanced studio work in traditional and non-traditional crafts for theatrical events, including mask work, puppetry, stage furniture construction, upholstery, weaponry, armor, and special effects. Repeatable. Laboratory fee: \$50. Prerequisite: 218a or special approval needed from the instructor..

407-3 Scene Design. Technical and artistic aspects of scene design. Theory and practice. Supplies at least \$25 per semester. Prerequisite: 218a, 309, 409, or special approval needed from the instructor..

408-3 Model Making. Craft of scenic model making for the stage and other dramatic media. Prerequisite: 218a or consent of instructor.

409-6 (2,2,2) Scene Painting Studio. Studio work in basic and advanced scene painting techniques and materials. Projects include wood, drapery, foliage, marble, transparencies, scrim printing, dye painting, faux finishes, metal reflections, and murals. Repeatable. Laboratory fee \$50. Prerequisite: 218a or special approval needed from the instructor.

410-9 Children's Theater. Theory and practice in performing theater for children. Class activities include lectures on various aspects of production as well as producing a touring children's play for local area schools. Special approval needed from the instructor.

411A-3 Playwriting — The Short Play. Principles of dramatic structure as they apply to the writing of a short play. Through class discussion, analysis of short plays, and the writing of specific projects and exercises, students will write at least two drafts of a 20-30 minute complete play. Individual plays may be considered for production in the theater's program for new plays. Prerequisite: 311a or special approval needed from the instructor.

411B-3 Playwriting — The Full-Length Play. Principles of dramatic literature as they apply to the writing of a full-length (90-120 minute) play. Typical well-made patterns are studied, along with experimental forms and variations. Some discussion of marketing plays is included. Prerequisite: 411a or special approval needed from the instructor.

412-2 Patterning and Draping for the Theatre. This course introduces the theatrical costume design and technical student to the basics of pattern development and construction techniques used to develop a 3-dimensional theatrical costume, with focus on giving the student a working knowledge of costume production, flat patterning, and draping techniques. Prerequisite: 218c or special approval needed from the instructor.

413-6 (3,3) Drafting for the Theater. Development of the student's skill in scenographic technique, including ground plans, sections, elevations, and detail construction

drawings. Prerequisite: 218a or special approval needed from the instructor.

414-3 Costume Design. History of Western Costume from Greek to Renaissance and its adaptation to stage use. Theory and practical application of design and color. Prerequisite: 218c or special approval needed from the instructor.

415A-2 to 4 Costume Crafts I. This course focuses on advanced skills in costume technology, including but not limited to, millinery, jewelry-making, armor, and masks. Prerequisite: 218c, 412 or special approval needed from the instructor.

415B-2 to 4 Costume Crafts II. This course focuses on advanced skills in costume technology, including but not limited to, dying and fabric modification, ventilating and basic puppetry. Prerequisite: 218c, 412 or special approval needed from the instructor.

416-3 Structural Design for the Stage. In-depth study of the art and practice of structural design for the stage and analysis of structural properties of standard stage scenic materials. Prerequisite: 218a, 309 or special approval needed from the instructor.

417-3 to 6 (3,3)Advanced Acting. Utilization of the actor's process in the performance of various theories and styles of acting. May be repeated once for credit. Prerequisite: 317a.

418-3 Lighting Design. Investigation of stage lighting design, theory and professional practice. Special attention to color theory and its application to stage lighting. Lecture/Laboratory. Prerequisite: 218b, 309 or special approval needed from the instructor.

419-3 Technical Direction. Advanced study of principles and procedures of scenic construction and stage rigging. Includes scene shop organization, materials, and specialized stage equipment; preparation for professional technical direction. Lecture and laboratory to be arranged. Prerequisite: 218a,b, 309, 407.

450-3 to 9 Topical Seminar. An intense examination and application of selected areas of interest. Topics will vary and may include such areas as stage management, audition and interview, current political theater. Special approval needed from the instructor..

454-3 American Theater. The development of American theater from colonial times to the present. Includes a study of the American musical theater from preminstrels through contemporary music-drama.

455-3 Dramaturgy. An introduction to the theory and practice of dramaturgy, including a survey of contemporary critical theories as they apply to the pre-production work of the dramaturg. The student will apply methodologies studies to plays from the classical repertory and to the works of new playwrights. Prerequisite: 311 or special approval needed from the instructor..

460-3 Black Theatre: Intersections of Culture and Performance (same as BAS 420). This course will freely examine the intersections between African and African

American theatre. It will study the origins, form and agenda of Black Theatre by tracing the commonalities of culture and performance between African and African American theatres. Students will be exposed to seminal essays, topical plays and performances while they hone their own critical and creative skills.

500-3 Introduction to Research Methods. An introduction to the principles and methods of the various types of research in theater. The student may elect to focus on the research demands of a selected area of interest within the degree program pursued. One objective is the formulation of a research problem and a prospectus. Special approval needed from the instructor.

501-3 Contemporary Developments. A survey of the significant developments in theater and related arts from the beginning of the 19th century to the present through the study of documentary material, critical works, and selected plays. Individual reports, guest lecturers and lectures provide focus on selected areas. Required reading encompasses a broad spectrum of subjects. Special approval needed from the instructor.**502-3 to 12 (3,3,3,3) Advanced Directing Studio.** Emphasis on practical directing problems and concerns of individual students through research, rehearsal and performance. Includes survey of directing theories and practices with laboratory application of directing techniques. Special approval needed from the instructor.

503-1 Professional Development. An ongoing examination of issues important to the dramatist in contemporary theater: writing and developing new works, working in the collaborative environment, marketing and promoting one's work, understanding professional and legal ramifications, and other materials as appropriate. To be taken each semester for a maximum of four hours of credit. Special approval needed from the instructor.

504-3 Drama, Theories and Conventions: Part One. A historical and critical survey of dramatic theory, examining key critical texts and representative plays; from the Greeks through the Jacobean. Prerequisite: graduate standing or special approval needed from the instructor..

505-3 Drama, Theories and Conventions: Part Two. A historical and critical survey of dramatic theory, examining key critical texts and representative plays; from the restoration to the 20th Century. Prerequisite: graduate standing and permission of instructor.

506-2 to 4 The Collaborative Process. The theory and practice of the collaborative processes involved in play production; how designers, technicians, directors and playwrights interact with and communicate to each other to work as a creative team. Activities involve both hypothetical and fully realized productions when appropriate. May be taken for up to 4 hours.

510-6 (1,1,1,1,1,1) Production Design Seminar. Exploratory workshop experience in rendering techniques, creative problem solving, design aesthetics, and production philosophies. To be taken by graduate production design

students in residence, each semester, with exceptions by consent of instructor.

511A-3 to 6 Playwriting Workshop. A practical laboratory course in which playwriting students will have one or more original plays presented in staged readings or modified productions. Plays will be directed by graduate acting/directing students also enrolled in course. The workshop gathers a performance group for the presentation of the new plays. Student playwrights are expected to constantly improve their work before and after presentation, to attend rehearsals, to work closely with directors and actors. Plays will be evaluated in critique sessions. Special approval needed from the instructor.

511B-3 to 9 (3,3,3) Special Topics in Playwriting. A variety of topics will be offered on a rotating basis: Examining Shakespeare's Structure; Using Mythic Patterns in Narrative; and others that may be created. These courses involve reading critical materials, studying plays, discussing topics, and writing some form of dramatic material. Special approval needed from the instructor.

512-2 to 8 Advanced Costume Construction. This course focuses on advanced skills in the areas of cutting and draping for the theater. A variety of techniques will be taught, including but not limited to, flat patterning, bias draping, tailoring, and historical construction techniques. Prerequisite: 218c, 412 or special approval needed from the instructor..

516-2 to 12 Advanced Design and Production. An advanced studio-based study of the theories and practices of modern production and design with particular emphasis on the interaction of the sub-disciplines of scenic, costume, light, sound design, and technical production as well as the collaborative nature of theatrical production. Special approval needed from the instructor.

520A-3 Period Style for Theater I. A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Egyptian to the Renaissance.

520B-3 Period Style for Theater II. A survey of the costumes, architecture, furniture, decorative styles and motifs of major periods and countries relating to western culture and theater. Late Renaissance to 20th Century.

522-1 to 12 SIU Summer Theater. Practical experience in summer stock play production. Performance or technical work in SIU Summer Theater only. Maximum of six hours per summer. Special approval needed from the instructor.

525-3 Contemporary Experiments in Drama. By studying contemporary literary theory and applying these critical tenets to new American plays, students develop tools to use in reading, understanding and writing plays in unconventional, non-traditional styles. Course work includes extensive reading of both essays and plays, discussing these matters, preparing reports and writing a play. Special approval needed from the instructor.

526-3 to 12 (3 per topic) Seminar in Theater Arts. Special topics of interest to advanced students. Subject is

determined by department and instructor. Areas: (a) Performance/production. (b) Theory, criticism, and playwriting. Seminar in same area may be taken twice. Special approval needed from the instructor.

530-1 to 12 Independent Study. Independent research on selected problems. A maximum of three credit hours may be taken for a single project. Special approval needed from the instructor.

550-2 to 6 (2 per topic) Topical Seminar. In-depth studies of topics of special interest to advanced students concerning individual or groups of playwrights, directors, designers, and their techniques and theories. Topic is determined in advance. Special approval needed from the instructor.

560-1 to 21 Professional Work Experience. Credit may be granted for professional work experience prior to acceptance into the program. Special approval needed from the instructor. Graded *S/U* only.

561-1 to 12 Theater Internship. After completion of the M.F.A. core curriculum and basic courses in student's specialization, credit may be granted for internship at professional theaters, training programs, or studios. Special approval needed from the instructor. Graded *S/U* only.

599-1 to 6 Thesis. Minimum of three hours to be counted toward a Master's degree.

600-1 to 36 (1 to 16 per semester) Dissertation. Minimum of 24 hours to be earned for the Doctor of Philosophy degree.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only.

WOMEN'S STUDIES

<http://womenstudies.siu.edu/>

wmst@siu.edu

Certificate in Women's Studies

The purpose of the Women's Studies certificate is to meet the demand for formal recognition of graduate level Women's Studies academic preparation; enhance preparation for job opportunities with Women's Studies credentials; enhance and broaden the perspectives of graduate students from various related fields; and serve interested community members and /or spouses or partners of national/international students not pursuing a graduate degree, but interested in the specialty area of Women's Studies. The program requires 18 hours of coursework and independent study. This includes: 1) nine hours of required coursework selected from an

interdisciplinary grouping of 500 level courses (WMST 515/SPCM 515, WMST 544/SOC 544, WMST 550/PSYC 550, WMST 535/EAHE 535i, WMST 560/KIN 560, WMST 591, or other 500 level course as approved by the Director of Women's Studies); and 2) nine hours of electives including three hours of independent graduate readings. The student must be currently enrolled in a graduate degree program at SIUC or an individual holding a bachelor's degree and admitted to the Graduate School (non-declared). For more information, contact: M. Joan McDermott, Women's Studies Director, Department of Women's Studies, Southern Illinois University, Carbondale, IL 62901-6518, e-mail: joanmcd@siu.edu

Courses (WMST)

There is no approved graduate program in women's studies. Four-hundred-level courses may be taken for graduate credit unless otherwise indicated in the course description.

401-3 Third Wave Feminism. This course discusses theories and practices of third wave feminism from a national and global perspective. We will discuss ways third wave feminism is being talked about and understood by others and ourselves. The selected readings offer a range of voices and articulation of third wave feminism including United States, post-colonial, transnational, queer, multicultural, theoretical, and practical. The course is heavy on reading. By the end of this course students should be able to express their understanding of third wave feminism.

403-3 Masculinity in the United States. This course is a reading-based seminar covering concepts of masculinity in the United States. The reading cover cultural as well as identity elements of what being "man" means (and how that definition has changed over time and contexts), historical as well as contemporary understanding of masculinity.

406A-3 Gender, Family, and Sexuality in Pre-Modern Europe. (Same as HIST 406A) A discussion of the history of the family, creation of gender roles, and importance of sexuality from medieval times to the French Revolution.

406B-3 Gender, Family, and Sexuality in Modern Europe. (Same as HIST 406B) a) to the French Revolution; b) from the French Revolution. A discussion of the history of family, creation of gender roles, and importance of sexuality from medieval times to the present in Europe.

410- 3 Transcending Gender (same as ANTH 410 L). How do humans become male and female in different

societies? Can man become women and women become men? What other gender possibilities exist? Is male dominance universal? What are the sources of male and female power and resistance? Do women have a separate culture? What is the relationship between gender, militarism and war? These and other questions will be examined in cross-cultural perspective. Prerequisite: WMST 270d recommended for undergraduates.

415-3 to 6 (3,3) Topics in Gender, Sexuality, and Communication (same as SPCM 415). An exploration of advanced theories and research in gender and sexuality from communication perspectives. Course may be repeated when topics vary. Prerequisite: consent of instructor.

426-3 Gender, Culture, and Language (same as ANTH 426 and LING 426). This course is designed for students who have had some exposure to gender studies. It will focus on readings in language and gender in the fields of anthropological and socio-linguistics. Issues to be addressed are the differences between language use by men/boys and women/girls, how these differences are embedded in other cultural practices, and the various methodologies and theories that have been used to study gendered communication.

438-3 Women, Legal Practice and Social Change. This course is an advanced seminar in public law with a focus on gender, law and society. The course will engage with issues in feminist legal practice and the development of legal theories regarding gender. We will interrogate the relationship between theory and practice and the ways in which feminist jurisprudence has taken shape in the dynamics of this relationship. (See Political Science 438.)

440-3 Queen Visual Culture (Same as CP 469.) Course discusses aspects of the aesthetics, history, theory and politics of media representations of gender and sexuality. Cultural texts from one of a combination of media forms, genres, historical periods, and platforms will inform the historical and theoretical consideration of media representations of gender and sexual variation with a special interest on their bearings upon the present moment. May be repeated if topics vary.

442-3 Sociology of Gender (See Sociology 423).

446-3 Gender and Global Politics (Same as Political Science 456). An advance course examining gender systems and women's situations across cultures and countries. This course also studies the impact globalization has had on gender issues by looking at women's activism at international and transnational levels. Topics covered include women's political representation, gender and culture, women's social movements, gender and development, and gendered policy issues.

448-3 Gender and Family in Modern U.S. History (Same as HIST 448.) This course explores the history of gender and the family in the United States from the late 19th century to the present. Themes to be explored include: the family and the state, motherhood, race and family life, and the role of the "family" in national politics.

450A-3 Women in Music (same as MUS 450A). Explores the creative contributions of women in music, examining women's participation across a range of genres, cultural/geographic areas, and time periods. Prerequisites: junior/senior/graduate music major or consent of instructor.

452A-3 Traditions of Uppity Women's Blues (Same as MUS 452A). Examines the tradition of "uppity" women's blues from the so-called "classic" blues singers of the 19th century (Gertrude "Ma" Rainey, Bessie Smith, Ida Cox, etc.) to the contemporary blues of Saffire, Denise LaSalle and others. Explores ways blues women challenge conversions of gender and sexuality, racism, sexism, classism and homophobia. Prerequisite: Junior/senior/graduate music major or consent of instructor.

456-3 Feminist Philosophy (See Philosophy 446). Expand the course to a sequence: (a) Feminist Philosophy – a general survey of feminist theory and philosophical perspectives. (b) Special Topics in Feminist Philosophy – a special area in feminist philosophy explored in depth, such as Feminist Ethics, French Feminism, Feminist Philosophy of Science, etc. (c) Women Philosophers – explores the work of one or more specific women philosophers, for example Hannah Arendt, Simone DeBeauvoir, etc.

464-3 Audio Documentary and Diversity (Same as Radio-Television 464). The purpose of this course is the creation of short and long form audio documentaries by students, regardless of production background. It will introduce students to basic production techniques and diversity considerations during the making of a documentary. This course uses qualitative methods to

investigate an issue or document an event, with an emphasis on observation and interview techniques. Topics will explore the role of gender, race, ethnicity, and class during the planning, gathering, and production stages of the documentary. Course open to non-majors.

465-3 History of Sexuality in America (same as HIST 465). Comprehensive survey of sexuality from colonial times to the present. Examines social trends, politics, and cultural debates over various forms of sexuality. Students will engage in discussion, research, and writing.

468-3 Law and the Social Control of Women in American History (Same as CCJ 468 or History 468). An examination of the ways in which the law affects the behavior, life chances, identities and experiences of women, from colonial times to the present. Team taught by faculty from history and administration of justice.

470-3 College Student Sexuality. (Same as EAHE 470). Seminar designed to provide students with a strong grounding in the field of college student sexuality and sexual identity, covering the lived experiences of U.S. college students, the construction of sexualized collegiate identities through U.S. history, and how institutions of higher education have attempted to regulate, control, and (intentionally as well as inadvertently) effect college student sexuality.

476-3 Women, Crime and Justice (See CCJ 460 or Sociology 461.). Addresses the topics of women as offenders, as victims, and as workers in the criminal justice system.

489-3 Women, State, and Religion in the Middle East (same as HIST 489). Following an introduction to the question of women in Islamic law and Islamic History, this course will examine the changing status and experiences of women in a number of Middle Eastern countries in the 20th century, focusing on Egypt, Iran, and Turkey. Major themes will include legal, social and political rights, participation in social and economic life, cultural and literary production, and recent secular and Islamist women's movements.

490-1 to 6 Readings. Supervised readings in selected content areas of women's studies. Prerequisite: consent of instructor and women's studies coordinator.

491-1 to 6 Special Topics. Concentration on a topic of interest not offered through the regular course listings.

492-3 Women and Religion. This course will heighten and strengthen student's awareness of the roles and responsibilities of women as outlined in the sacred writings and scriptures of various world religions and as carried out in various cultures around the world.

493-2 to 6 Individual Research. Exploration of a research project under the supervision of a faculty member having graduate faculty status. The project must result in a written research report which is filed with the coordinator of women's studies. Prerequisite: consent of instructor and coordinator of women's studies and senior standing.

494-1 to 6 Practicum. Supervised practical experience in situations centering on women's issues, organizations, services, etc. The setting may be in one's own field of study or in the general content areas recognized in the women's studies program. Prerequisite: consent of instructor and coordinator of women's studies.

495-3 Women's Studies Student Seminar. A synthesizing experience for individuals minoring or interested in Women's Studies, and all graduate students. Topics will differ each semester. Prerequisite: consent of women's studies director.

515-3 to 9 (3,3,3) Communication and Gender (Same as Speech Communication 515). How communicative activity creates and sustains human beings as gendered. Emphasis on gaining familiarity with contemporary research on gendering from a particular perspective (e.g., ethnography, performance, phenomenology, quantitative methods, rhetorical criticism). May be repeated when perspective varies. Perspective announced prior to each offering.

535-3 Seminar: Gender in Higher Education. A seminar for specialized study of administrative practice and policy in gender in higher education (same as EAHE 535i)

544-3 Sociology of Gender (Same as Sociology 544). Examines major theories, themes, and research methods on the intersection of gender, race, class and sexuality. Topics may include: construction of gender, race, class and sexual identities; work; social movement; intersection of family and work; parenting and reproduction; historical and cross-national dimensions.

550-3 The Psychological Construction of Gender. (Same as Psychology 550) This course will focus on the psychology of gender within a feminist perspective and using a feminist approach. The term feminism, as used here, primarily implies that we will consider information and ideas for more diverse than simple empirical data. In our reading and discussion, we will consider politics, discrimination, the history of science, the history of patriarchy, the development of theory and ideas in general and the development of feminism in particular, and objective versus subjective views of science, and within these contexts, we will consider and study the psychology of gender.

560-3 Gender and Sport. (Same as Kinesiology 560.) This course explores psychological and sociological dimensions underlying the concept of gender and critically examines how gender relates to sport and physical activity. Students will be introduced to non-traditional as well as traditional research that addresses the issue of gender in various physical activity contexts.

565-3 Continental Feminist Philosophy. An examination of major figures and problems in continental feminism, focusing on metaphysical, ethical, political, and aesthetic theories in the works of Beauvoir, Kristeva, Irigaray, Butler, and Kofman. (Same as PHIL 565.)

575-3 Women in Higher Education. (Same as EAHE 575.) The goal of this course is to provide an overview of women in higher education. Topics that will be considered are: feminism's impact of women in higher education; the division of labor for women (including faculty and professional staff positions); historical and sociological perspectives of access to higher education including curriculum and pedagogy.

590-1 to 3 Readings. Supervised readings in selected advanced subjects. Prerequisite: consent of instructor and consent of women's studies director.

591-3 Special Topics. Concentration on a topic of interest not offered through regular course listings.

WORKFORCE EDUCATION AND DEVELOPMENT

<http://wed.siu.edu/public/>

wed@siu.edu

COLLEGE OF EDUCATION AND HUMAN SERVICES

Graduate Faculty:

Anderson, Marcia, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1975; 1970.

Asunda, Paul, Assistant Professor, Ph.D., University of Georgia, 2007; 2008. Teaching methodology, Professional Development Instructional Technology, Curriculum and Instruction, and STEM research | Career and Technical Education.

Bailey, Larry J., Professor, *Emeritus*, Ed.D., University of Illinois, 1968; 1969.

Baker, Clara Mae, Associate Professor, Ph.D., Ohio State University, 1989; 1989. Teaching methodology, curriculum & instruction, professional development, office administration, qualitative research.

Bortz, Richard F., Professor, Ph.D., University of Minnesota, 1967; 1977. Instructional systems design, occupational training and curriculum development, organizational and occupational analysis, competency-based education and training, individualized instruction, faculty development and evaluation.

Bubnas, Phyllis, Assistant Professor, *Emerita*, M.S., Southern Illinois University, 1960, 1972.

Buila, Theodore, Associate Professor, *Emeritus*, Ph.D., Cornell University, Ithaca, NY, 1968; 1968.

Calvin, Jennifer, Assistant Professor, Ph.D., Ohio State University, 2005; 2005. Human resource development, international HRD, distance learning, self-regulated learning, change management, impact of culture on learning and work, motivation, communities of practice, and professional development.

Freeburg, Beth Winfrey, Associate Professor and *Interim Chair*, Ph.D., Southern Illinois University, 1994; 1992. Human performance analysis, behavioral and societal norms, instructional systems design.

Gooch, Bill G., Professor, *Emeritus*, Ed.D., University of Tennessee, 1973; 1973.

Hagler, Barbara, Assistant Professor, Ph.D., Arizona State University, 1991; 1987. Business education, improvement

of teaching, workforce education foundations, computer technology, distance education, training and human resource development.

Putnam, Alvin R., Associate Professor, Ed.D., Oklahoma State University, 1978; 1997. Leadership, human resource development, international education, curriculum and evaluation.

Ramp, Wayne S., Professor, *Emeritus*, Ed.D., Bradley University, 1956; 1957.

Reneau, Fred W., Professor, *Emeritus*, Ed.D., Virginia Polytechnic Institute and State University, 1979; 1979.

Ridley, Samantha Sue, Assistant Professor, *Emerita*, M.S., Southern Illinois University Carbondale, 1959; 1964.

Rosenbarger, Maxine, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1970; 1973.

Shields, Bill, Assistant Professor, M.S., Southern Illinois University, 1962. 1962. Instructional systems design, methods and techniques of training, training systems management.

Sims, Cynthia H., Assistant Professor, Ed.D., Northern Illinois University, 2004; 2005. Adult education and learning; workforce diversity; power and privilege; human resource development; service-learning; diversity in higher education; and campus-community partnerships.

Stadt, Ronald W., Professor, *Emeritus*, Ed.D., University of Illinois, 1962; 1967.

Stitt, Thomas R., Professor, *Emeritus*, Ph.D., Ohio State University, 1967; 1967.

Sullivan, James A., Professor, *Emeritus*, Ed.D., West Virginia University, 1967; 1968.

Washburn, John S., Professor, *Emeritus*, Ed.D., University of Illinois, 1977; 1986.

Waugh, Keith, Assistant Professor, Ph.D., Virginia Polytechnic Institute and State University, 1996; 1999. Needs assessment, curricula design, delivery, formative and summative evaluations.

The Center for Workforce Development

The Center for Workforce Development was established to create a research, education and training group that provides students and faculty with the opportunity to collaborate on research and development, education and training, and information and product dissemination. The objectives of the Center emphasize:

1. Research and Development - addressing the broad array of issues affecting the nature of the workforce and workplace settings.

2. Education and Training - addressing development and delivery of customized workforce education and training programs/courses in collaboration with agencies and organizations in the public and private sectors.

3. Information and Product Dissemination - addressing the need for dissemination of curriculum and instructional resources useful for promoting work-related education and training.

The Center for Workforce Development will serve as a broker in the exchange and sharing of information and higher education resources associated with the nature of the workplace and workforce. Further, the Center will act as a catalyst in bringing together leaders from business, research, education and government to interact and work together to formulate public policy associated with workforce development.

The Department of Workforce Education and Development offers programs of study leading to the Master of Science in Education and Doctor of Philosophy degrees. Information about either program may be obtained by writing: Director of Graduate Programs, Department of Workforce Education and Development, Southern Illinois University Carbondale, Carbondale, IL 62901-4605.

This program requires a nonrefundable \$50.00 application fee that must be submitted with the application for Admissions to Graduate Study in Workforce Education and Development. Applicants may pay this fee by credit card if applying electronically. Applicants submitting a paper application must pay by personal check, cashier's check, or money order made out to SIU, and payable to a U.S. Bank.

Master of Science in Education Degree

The master's degree with a major in workforce education and development is designed to accommodate a broad range of individuals preparing for training, instructional, and administrative roles in career and technical education, human resources, business, industry, government, and other fields. For students with a background in training or education, the major consists of a minimum of 32 semester hours of course work for the thesis option and 36 semester hours for the nonthesis option. For students with backgrounds in fields other than education, two foundation courses (WED 486 and 466) are required. These two courses are not counted as part of the required hours for the thesis or nonthesis program. A grade of B or higher is required for each course. Program requirements are organized into professional core requirements and specialty area courses. A grade of B or higher is required for each professional core course, and a 3.0 GPA is required for the specialty area courses.

Professional Core Requirements. For the thesis option, the core consists of 4 courses (14 hours): WED 560, 561, 566, 599 (5 hours). For the nonthesis option, the core consists of 4 courses (12 hours): WED 560, 561, 566, and 593.

Specialty Area Courses. This component consists of 18 hours (thesis option) or 24 hours (nonthesis option) of course work relevant to a student's career goals. Technical courses, professional courses, and internships may be included. Courses may be taken within the department or in other units of the college or University.

Thesis. In accordance with Graduate School requirements, students in the thesis option must complete a thesis (WED 599) showing evidence of the student's knowledge of research techniques. Upon completion of the thesis, a final oral examination of the research is conducted by the student's advisory committee.

The program of study is individually tailored based upon the student's background, interests, and career goals. Program graduates are employed in career and technical education at the secondary and postsecondary levels and in training positions in such fields as aviation management, business, automotive technology, family and consumer science, industrial technology, agricultural education, and career development. In business environments, graduates work in employee/industrial/management training, health care administration, and human resource environments. Graduates also work in various levels of government in such fields as education, military service, and personnel training.

Doctor of Philosophy Degree in Education

Advanced studies leading to the Doctor of Philosophy degree in education with a concentration in workforce education and development is offered through the Department of Workforce Education and Development. The concentration is a broad, general leadership and professional development degree that serves professionals having knowledge, experience, and interests in the fields of: (a) career and technical education, (b) career education, (c) employment and training, or related fields.

Persons seeking admission to the program must meet all requirements for admission established by (a) the Graduate School of the University, (b) the College of Education and Human Services, and (c) the Department of Workforce Education and Development. It is required that applicants possess a background of academic and professional experience which will provide a basis for advanced study and research. More specifically, the program is designed for individuals with a background and experience in teaching, program administration, or training and development. Admission to the concentration is determined by a vote of the graduate faculty of the Department of Workforce Education and Development.

The program of study consists of 64 hours beyond the master's degree and includes an 8-hour professional seminar sequence in the College of Education and Human Services, a 15-hour departmental core, 17 hours of supportive studies which may include an internship, research tool competence, and 24 hours of dissertation credit.

Courses (WED)

404-3 Applications of Technology for Workforce Ed. & Training. Analyses of technology used in workforce education and training programs. Demonstration of skill level needed to train others in secondary/postsecondary education and business training environments on technological administrative processes, data management, and curriculum integration. Students will learn advanced computing concepts and applications using integrated software. Prerequisite: ISAT 114 or equivalent.

405-3 Multimedia-based Instruction for Workforce Education. Acquisition of skills to produce multimedia "assets" (web page, audio/sound bytes) and application of instructional design techniques to computer-based instruction in workforce education. Impact of multimedia on workplaces and workforce training and utilization of course management systems to deliver instruction will be analyzed. Prerequisite: WED 404 or equivalent.

407-3 Administrative Communications and Technology. Application of communication theory, human relations concepts, and information technology to workplace situations. The processing of organizational information for productivity will be stressed. Students will acquire skills to make sound decisions of how to best communicate in work-based situations. Students will learn computerized procedures for communication. Prerequisite: WED 302 and WED 404 or equivalent.

408-3 Integrating and Managing Technology Applications for Workforce Education and Training. Design of workforce training applications integrating professional advanced features of computer software, communication technologies, and multimedia features, including management of educational LAN systems. Restricted to workforce education and development majors or consent of department. Prerequisite: 306.

410-3 Issues in Business Training/Education. Study of current issues in business training and education related to history, current status and trends. Organization of instruction, instructional settings, relation to general education, integration and impact of technology, curriculum development/review and evaluation of business training/education impact in the workplace. Restricted to workforce education and development majors or consent of department.

413-3 Organizing and Directing Instruction in Secondary Career and Technical Programs. Techniques and procedures applicable to effective teaching including planning for instruction, instructional design technology and general teaching strategies for the secondary career and technical classroom. This course will study pedagogy and utilize various techniques and technology to help students master the skills needed in their respective careers. Students will learn about and practice various teaching methods including demonstrations, cooperative learning,

service learning, integration of academics and technology into the workplace-oriented class, project-based learning, and contextual learning. A laboratory section will be required. Limited to workforce education and development students admitted to the teacher education program or one of the career and technical education alternative certification programs in workforce education. Restricted to workforce education and development majors or consent of department.

414-6 (3,3) Instructional Methods for Business Education. Specific methods, techniques and materials to deliver instruction in business education: (a) accounting, basic business (business and technology concepts, economics, consumer education, product-oriented marketing, small business management), and workplace skills; (b) business computer systems, information processing and keyboarding. This course requires an additional laboratory meeting time. Restricted to workforce education and development majors or consent of department. Prerequisite: 310 or 462.

431-3 Demonstration and Laboratory Techniques. Practice in planning and carrying out instructional demonstrations in family and consumer sciences. Procedures for laboratory and guided practice to develop psychomotor skills. Attention given to TV/Media presentation and use of equipment. Restricted to workforce education and development majors or consent of department. Prerequisite: 320 or consent of instructor.

460-3 Occupational Analysis and Curriculum Development. Systems approach to curriculum development. Includes analyzing occupations, specifying objectives and developing curriculum. Restricted to workforce education and development majors or consent of department.

461-3 Workforce Education Needs Assessment. Overview of needs assessment and analysis procedures used in workforce education environments. Learners will design and develop needs assessment instruments, collect and diagnose data to identify those workplace performance issues requiring training solutions, and develop a formal report detailing needs assessment findings and training solution recommendations. Restricted to workforce education and development majors or consent of department.

462-3 Instructional Methods and Materials. Instructional methods in occupational training program. Restricted to workforce education and development majors or consent of department. Prerequisite: 460.

463-3 Assessment of Learner Performance. Development and use of evaluation instruments to assess student performance in training classrooms and laboratories. Criterion- and norm-referenced objectives, applications of taxonomies in development of written tests,

performance tests and attitude measures. Restricted to workforce education and development majors or consent of department. Prerequisite: 460.

465-3 The Human Resource Specialist. This course provides an overview of the theoretical frameworks and practices related to human resource management and development. Examines the strategic alignment of human resource functions with organizational goals.

466-3 Foundations of Work Force Education. Examination of the historical, social, economic and psychological foundations of workforce education. Nature and role of education and training in preparing people for the world of work. Restricted to workforce education and development majors or consent of department.

467-3 Theory and Practice of HRD. Students will examine different factors that influence, direct and shape the functions of human resource development (HRD) in organizations. Topics include models, theoretical foundations, and philosophical perspectives within HRD, an overview of the HRD functions within organizations, and the various roles HRD can play within organizations.

468-3 Education/Labor Force Linkages. Attention given to the following areas: overcoming barriers to the linkage process; developing effective lines of communication; resource sharing; conducting joint problem solving with other agencies and individuals within the community; and jointly developing and providing programs and services. Restricted to workforce education and development majors or consent of department.

469-3 Training Systems Management. Insight and understanding of administration and management of organizational training. Principles and techniques of managing training organizations. Process of planning, organizing, marketing, programming, staffing, budgeting and evaluating a training organization. Restricted to workforce education and development majors or consent of department.

470-3 Trends and Issues in Quality Systems Management in Education. This course provides an overview of the economic basis of and trends and issues relevant to Quality Systems Management in Education. The course examines compliance models and criteria models for quality systems. Concentration will be on ISO 9000:2000 series model requirements with specific emphasis on internal audits, documentation, implementation and registration.

472-3 Organizing Cooperative Education. Introduction to cooperative education including history, rational, legislation, goals and objectives. Programming, public relations and evaluation of cooperative education. Introduction of student selection and management of cooperative education programs. Fulfills three semester hours of six required for State of Illinois certification. Restricted to workforce education and development majors or consent of department.

473-3 Coordinating Cooperative Education. Competencies required for coordination of cooperative education programs. Selection and maintenance of training stations, student placement, related instruction and program management. Fulfills the remaining three semester hours required for State of Illinois certification. Restricted to workforce education and development majors or consent of department. Prerequisite: 472.

474-3 Individualized Training. Study and development of theory, characteristics, appropriateness and evaluation techniques of individualized training packages. Review of current state of individualized instruction in work education. Restricted to workforce education and development majors or consent of department. Prerequisite: 460.

486-3 Adult Learning. Course focus is on adult development and learning principles. Adult learning styles and motivation to learn are discussed in the context of designing effective instructional strategies appropriate in various workforce education venues. Restricted to Workforce Education and Development majors or consent of department.

490-1 to 4 Readings. Supervised reading for qualified students in Workforce Education and Development. Restricted to Workforce Education and Development majors or consent of department. Prerequisite: consent of instructor.

491-1 to 5 Advanced Occupational Skills. Modern occupational practice in selected fields for experienced professionals seeking advanced techniques. Restricted to workforce education and development majors or consent of department. Prerequisite: consent of instructor.

494-1 to 4 Workshop. Current workforce education issues for teachers, supervisors, and administrators. Emphasis of each workshop will be identified in workshop announcements. Restricted to Workforce Education and Development majors or consent of department.

497-1 to 6 Practicum. Applications of work education skills and knowledge. Cooperative arrangements with corporations and professional agencies to study under specialists. Restricted to workforce education and development majors or consent of department. Prerequisite: 20 semester hours in specialty.

498-1 to 5 Special Problems. Investigation of problems in workforce education and development. Restricted to Workforce Education and Development majors and consent of department. Prerequisite: consent of instructor.

504-3 Multimedia Production Technologies in Workforce Education. Application of multimedia technologies—graphics, text, video, audio, on-screen buttons and other event triggers—into workforce education delivery systems. Students will work as a team in designing, developing, editing, and delivering interactive multimedia instructional training products. Prerequisites: WED 405. Restricted to Workforce Education and Development majors or consent of department.

505-3 Multimedia Delivery of Workforce Education by Distance Learning. Focuses on the use of distance learning and multimedia technologies in the delivery of instruction in workforce education and development settings. Course participants will design and deliver instruction for the distance education environment individually and in groups. Restricted to Workforce Education and Development majors or consent of department. Prerequisite: 503 and 504 and consent of instructor. Advanced videoconferencing technologies are emphasized.

511-3 Instructional Trends in Workforce Education Programs. Examination of research relating to instructional emphases and strategies unique to career and technical training programs, corporate training programs, and adult education. Restricted to WED majors or consent of department

551-3 Employment Law in Human Resource Development. Examines current and practical information in the area of employment law as it relates to human resource development in organizations. Focus is on helping organizations avoid liability through HRD interventions. Restricted to WED majors or consent of department

552-3 Recruitment, Selection & Compensation: Impact of HRD. Overview of the theoretical frameworks and practice related to recruitment, selection and compensation. Examines impact of these HR theories and practice on human resource development in organizations. Prerequisite: WED 465 The Human Resource Specialist. Restricted to WED majors or consent of department

553-3 Emerging Trends in HRD. Examination of current topics and research issues in the field of Human Resource Development not covered in other regularly scheduled courses. Emphasis will be on recent and present issues in the field, with topics and discussions focused on links between research and practice. Prerequisite: WED 465 The Human Resource Specialist. Restricted to WED majors or consent of department

560-3 Introduction to Workforce Development Research. This course provides an exploration of the scope, values, and purposes of research in workforce development. Focus is on (a) identifying how theory and research are practical tools to solve workforce development challenges that practitioners face on a daily basis; (b) analyzing research articles, and (c) developing academic writing skills. Restricted to WED majors or consent of department

561-3 Research Methods. Basic research methods and techniques in the design, investigation and reporting of research studies relating to education for work. Prerequisite: WED 560. Restricted to Workforce Education and Development majors or consent of department.

563-3 Training Measurement and Evaluation. Evaluation systems and activities for evaluating training programs. Application of research methods and data analysis in the

human resource development process, with concentration on assessing trainee reaction and planned action, learning, skill, business impact and return on training investment. Prerequisite: 463. Restricted to WED majors or consent of Department.

564-3 Program Evaluation for Work Education. Evaluation systems and activities for evaluating national, state, and local work education programs. Systems include programmatic accreditation and state agency evaluations. Activities include personnel, facilities, access and equity, community resources and community needs evaluations. Restricted to WED majors to consent of Department.

566-3 Administration and Supervision. Nature, function, and techniques of administration and supervision of education for work programs at all levels. Restricted to Workforce Education and Development majors or consent of department.

574-3 Occupational Information. The role of instructional and supervisory personnel in the total occupational information system. Kindergarten to adult. Restricted to Workforce Education and Development majors or consent of department.

576-6 (3,3) Policy Implementation and Supervision. Planning, implementing, and controlling local education agency components of state and federal occupational programs. (a) Objective program planning, leadership, communications. (b) Management information systems, financial decisions, staffing patterns. Restricted to Workforce Education and Development majors or consent of department.

581-3 Workforce Diversity. Foundational information concerning a diverse/multicultural society. Importance of understanding cultural and demographic similarities/differences and how this information relates to the workplace and to education/training environments. Social diversity issues of current importance to workforce preparation and development of diversity training are included. Restricted to Workforce Education and Development majors or consent of department.

584-3 Curriculum Foundations for Work Education. Acquaints students with different factors that influence, direct, and shape curriculum as it pertains to the work-oriented aspects of school and society. Topics include law and the curriculum, philosophies and organizational models, differing approaches by grade level and setting, and the development of work-related curriculum. Restricted to Workforce Education and Development majors or consent of department.

586-3 Developing Program for Adult Learners. Overview of current organizational patterns of adult programs and analysis of program delivery systems. Students will develop advanced skills in planning and designing programs for adults in workforce education environments. Prerequisite: 486, restricted to Workforce Education and Development majors or consent of department.

590-1 to 9 Readings. Supervised readings in selected advanced subjects. Prerequisite: consent of instructor. Restricted to WED majors or consent of Department.

591-1 to 9 New Developments. Recent developments and trends in various aspects of education for work. Instruction provided by recognized authorities. Restricted to Workforce Education and Development majors or consent of department.

592-3 Current Issues and Research. Examination of broad topics, issues, and research not covered in other regularly scheduled courses. Emphasis will be on recent and present issues, which are in the process of evolving. Content will be selected from three primary professional fields: (a) Vocational/technical education, (b) Employment and training, and (c) Career education. Required of all Ph.D. students. Restricted to Workforce Education and Development majors or consent of department.

593-3 Individual Research. The selection and investigation of a research topic culminating in a paper satisfying the research requirement for a Master of Science in Education degree. Prerequisite: WED 561. Restricted to WED majors or consent of Department.

594-3 Advanced Research Methods. Development of research competencies and preparation of proposal for thesis or dissertation research. Familiarity with research in various foundation areas of education for work. Prerequisite: WED 592. Restricted to WEDMAJORS or consent of department.

595-1 to 16 Professional Internship. Supervised professional experience in appropriate educational settings. May be done on- or off-campus. Restricted to Workforce Education and Development majors or consent of department.

597-3 (1,1,1) Doctoral Seminar in Workforce Education. Designed to provide doctoral students the opportunity to discuss and practice major professional roles in workforce education and development. Requirements of teaching, research, publication, and service are defined. Students will accomplish identified professional expectations in (a) Orientation to Doctoral Study; (b) Research Publications and Presentations; (c) Grantmanship. Prerequisite: admission to the Ph.D. in education program. Restricted to WED majors or consent of Department.

598-1 to 6 Special Investigations. Selection and investigation of a problem: use of relevant sources and techniques; collection and analysis, evaluation, interpretation of data, and the writing of a report of the investigation for students whose particular needs are not met by existing classes. Prerequisite: consent of instructor. Restricted to WED majors or consent of Department.

599-1 to 6 Thesis. Restricted to Workforce Education and Development majors or consent of department. Prerequisite: WED 561. Restricted to WED majors or consent of Department.

600-1 to 36 (1 to 12 per semester) Dissertation. Restricted to Workforce Education and Development majors or consent of department.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded *S/U* or *DEF* only. Restricted to Workforce Education and Development majors or consent of department.

ZOOLOGY

<http://www.zoology.siu.edu/>
zoology@zoology.siu.edu

COLLEGE OF SCIENCE

Graduate Faculty:

Anderson, Frank E., Associate Professor, Ph.D., University of California, Santa Cruz, 1998; 1999. Invertebrates; molecular systematics, molecular evolution.

Anthony, Terence R., Associate Professor, *Emeritus*, M.D., University of Chicago, 1968; and Ph.D., University of Chicago, 1975; 1971.

Brandon, Ronald A., Professor, *Emeritus*, Ph.D., University of Illinois, 1962; 1963.

Brooks, Marjorie, Assistant Professor, Ph.D., University of Wyoming, 2003; 2009. Limnology; biogeochemistry; toxicology.

Burr, Brooks M., Professor, Ph.D., University of Illinois, 1977; 1977. Ichthyology.

Eichholz, Michael W., Associate Professor, Ph.D., University of Alaska, 1998; 2002. Waterfowl, wetland ecology.

Englert, DuWayne C., Professor, *Emeritus*, Ph.D., Purdue University, 1964; 1963.

Feldhamer, George A., Professor, Ph.D., Oregon State University, 1977; 1984. Mammalogy, wildlife ecology.

Garvey, James E., Associate Professor, Ph.D., Ohio State University, 1997; 2000. Fisheries biology.

Halbrook, Richard S., Associate Professor, Ph.D., Virginia Polytechnic Institute and State University, 1990; 1993. Wildlife toxicology.

Heidinger, Roy C., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1970; 1970.

Heist, Edward J., Associate Professor, Ph.D., College of William and Mary, 1994; 1998. Population genetics; conservation genetics; fishery management.

Hellgren, Eric C., Professor, Ph.D., Virginia Tech, 1988; 2005. Wildlife Ecology.

Ibrahim, Kamal, Associate Professor, Ph.D., Cambridge University, 1989; 2001. Population genetics.

Jimenez-Ruiz, F. Agustin, Assistant Professor, Ph.D., University of Nebraska-Lincoln, 2004; 2009. Parasitology.

King, David G., Associate Professor, Ph.D., University of California, San Diego, 1975; 1977. Invertebrate neurobiology; evolution.

Kohler, Christopher C., Professor, *Emeritus*, Ph.D., Virginia Polytechnic Institute, 1980; 1981.

Krajewski, Carey, Professor and *Director of Graduate Studies*, Ph.D., University of Wisconsin-Madison, 1988; 1990. Vertebrate molecular systematics.

LeFebvre, Eugene A., Associate Professor, *Emeritus*, Ph.D., University of Minnesota, 1962; 1966.

Lewis, William M., Professor, *Emeritus*, Ph.D., Iowa State University, 1949; 1949.

Lovvorn, James R., Professor, Ph.D., University of Wisconsin-Madison, 1987; 2009. Waterbird ecology; food webs.

Lydy, Michael J., Professor, Ph.D., Ohio State University, 2001. Aquatic toxicology.

McPherson, John E., Jr., Professor, Ph.D., Michigan State University, 1968; 1969. Entomology: insect ecology.

Muhlach, William L., Associate Professor and *Chair*, Ph.D., University of Illinois at Chicago, 1986; 1987. Developmental biology.

Nielsen, Clay, Associate Scientist, Ph.D., Southern Illinois University Carbondale, 2001; 2003. Wildlife ecology and management.

Reeve, John, Associate Professor, Ph.D., University of California Santa Barbara, 1985; 2000. Quantitative ecology.

Schauber, Eric M., Associate Professor, Ph.D., University of Connecticut, 2000; 2002. Wildlife ecology.

Shepherd, Benjamin A., Professor, *Emeritus*, Ph.D., Kansas State University, 1970; 1969.

Sparling, Donald W., Associate Professor, Ph.D., University of North Dakota, 1979; 2004. Wildlife ecology, contamination ecology.

Stahl, John B., Associate Professor, *Emeritus*, Ph.D., Indiana University, 1958; 1966.

Thomas, Richard H., Associate Professor, Ph.D., University of Arizona, 1985; 2004. Molecular evolution.

Trushenski, Jesse, Assistant Professor, Ph.D., Southern Illinois University Carbondale, 2006; 2008. Fish physiology and aquaculture.

Waring, George H., Professor, *Emeritus*, Ph.D., Colorado State University, 1966; 1966.

Whiles, Matt R., Professor, Ph.D., University of Georgia, 1995; 1999. Stream ecology; freshwater invertebrates; entomology.

Whitledge, Gregory, Assistant Professor, Ph.D., University of Missouri, 2001; 2995. Fish ecology and management.

The Department of Zoology's offers graduate programs leading to the Master of Science and Doctor of Philosophy degrees. These degrees are awarded on the basis of demonstrated scholarship, with an emphasis on the ability to organize, conduct, and report original research. The de-

partment's graduate program is organized around six disciplinary areas: conservation biology; ecology & ecosystem studies; environmental toxicology; evolutionary biology & systematics; fisheries biology & aquaculture; and wildlife ecology & management. These research groups draw

heavily upon the expertise of faculty members affiliated with SIUC's Fisheries and Illinois Aquaculture Center, Cooperative Wildlife Research Laboratory, and Center for Ecology. Graduate research in Zoology is facilitated by SIUC's geographic location, notably its proximity to extensive national forests, wildlife refuges, state parks, and other natural areas of diverse physiography.

Admission

Separate application forms must be submitted to the Department of Zoology and to the Graduate School. Both forms can be obtained via the departmental webpage (<http://www.science.siu.edu/zoologyv/applicationprocess2.html>). A completed departmental application includes the form, transcripts of all previous college credits, an official score report for the Graduate Record Examination (GRE) General Test, and three letters of evaluation that address the applicant's academic abilities. A nonrefundable application fee must be submitted with the departmental application form. Applicants pay this fee when applying electronically to the Graduate School. Students who wish to be considered for a university fellowship must have a complete application on file by December 1. There are no other application deadlines, but early contact with the department is encouraged.

Applicants for both M.S. and Ph.D. programs must fulfill all admissions requirements of the Graduate School. Inquiries about Zoology graduate program should be made to the Director of Graduate Studies in Zoology. More information is available on the department's website (<http://www.science.siu.edu/zoologyv/graduateprogram.html>). Prospective applicants are strongly encouraged to make contact with faculty members in their area of research interest prior to submitting an application.

Applicants to the master's program must possess the following academic background: 24 semester hours (or equivalent) in courses covering the basic principles of zoology (including animal diversity, genetics, ecology, and evolution or developmental biology); one year of college chemistry (organic and biochemistry are also desirable); one year of college mathematics including college algebra and trigonometry (calculus and statistics are also desirable); an undergraduate grade point average of at least 2.70 (A=4.0). Applicants with a GPA less than 2.70 will be considered on individual merit.

Applicants for the doctoral degree must have a solid background in biological science, hold a master's degree, and have a grade point average in graduate work of 3.25 or above. Applicants with a graduate GPA less than 3.25 will be considered on individual merit. Direct entry to the doctoral program for students with only a bachelor's degree, or accelerated entry from the master's program, is possible for students demonstrating exceptional potential.

Advisement and Progress Toward Degree

During the admission process and prior to registration, a student should consult with faculty members representing his or her area of interest to identify an advisor. Advisors

will be assigned formally by the Director of Graduate Studies upon admission. A change in advisor later in the program must be coordinated and approved by the Director of Graduate Studies.

Each student, in consultation with the advisor, must assemble an advisory committee to be approved by the Director of Graduate Studies before the end of the first semester of enrollment. For the master's degree, the committee shall consist of at least three graduate faculty members, one of whom may be from outside the department, with the advisor serving as chair. For the doctoral degree, the advisory committee shall consist of five graduate faculty members, one of whom must be from outside the department, with the advisor serving as chair. A program of study must be approved by the advisory committee and submitted to the Director of Graduate Studies no later than second semester of enrollment. A research proposal must be approved by the advisory committee and submitted to the Director of Graduate Studies no later than the third semester. Students may not register for ZOOL 599 or 600 before their proposal is approved.

Master of Science Degree

All requirements of the Graduate School must be satisfied. At least of 30 hours of graduate credit (15 hours at the 500 level) is required beyond the bachelor's degree, including 21 hours of graded coursework, 2 hours of ZOOL 589, 6 hours of ZOOL 599, and two or more courses in a specific area representing the research tool. A grade-point average of 3.00 in graduate coursework must be maintained. Failure to meet this requirement will result in academic probation and loss of financial support from the department.

Thesis. Students must prepare and defend a thesis based on the results of original research. The nature of the research is developed by the student in consultation with the advisor and advisory committee. The thesis is evaluated by the advisory committee and must be successfully defended before graduation. The defense consists of a presentation of thesis results in public seminar, followed by a close session of oral evaluation by the advisory committee. A final version of the thesis must be approved by the advisory committee, the Director of Graduate Studies, the Department Chair, and the Graduate School. M.S. candidates must follow all Graduate School procedures in applying for graduation and deposit one bound copy of their thesis with the department.

Doctor of Philosophy Degree

All requirements of the Graduate School must be satisfied. Students entering the doctoral program are expected to have taken courses in the broad areas of animal diversity & evolution, ecology, and cell biology & genetics. Admission to the Ph.D. program requires two courses in two of these areas and three courses in the third. Students may be admitted with deficiencies, but must acquire the necessary coursework as part of their doctoral studies.

There is no minimum credit-hour requirement beyond the Graduate School's residency and dissertation require-

ments. A student, in consultation with his or her advisory committee, prepares a program of study that includes courses (including two semesters of ZOOL 589), seminars, and research. A research tool, consisting of at least two courses in a specific subject area, is required. A 3.25 grade point average in graduate coursework must be maintained. Failure to meet this requirement will result in loss of financial support from the department.

Preliminary Examinations. Written and oral examinations are taken after the tool requirement and major portion of any other formal coursework are completed, usually at the end of the second year of graduate study. The examinations focus on the student's area of research expertise as defined by the student, the advisor, and the advisory committee, and approved by the Director of Graduate Studies and the Department Chair. Administration and evaluation of these examinations is governed by the department's Preliminary Examination Policy. Students must pass both preliminary examinations to advance to candidacy.

Courses (ZOOL)

Students enrolled in zoology courses may incur field trip or laboratory expenses of \$5 to \$25.

405-3 Systematic Zoology. Theory and procedure of classification; population taxonomy; variation and its analysis; rules of zoological nomenclature; taxonomic publication. Three one-hour lecture-discussion meetings per week. Prerequisite: 220a,b or 220.

407-4 Parasitology. Principles, collection, identification, morphology, life histories and control measures. Two lectures and two 2-hour laboratories per week. Prerequisite: 220a. Laboratory/Field Trip fee: \$15

408-3 Herpetology. Taxonomic groups, identification, morphology, and natural history of amphibians and reptiles. One lecture and two 2-hour laboratories per week. Laboratory/field trip fee: \$15. Prerequisite: 220b or 220.

409-4 Vertebrate Histology. Microscopic structure of organs and tissues with emphasis on mammalian material. Two lectures and two 2-hour lab per week. Laboratory/field trip fee: \$15. Prerequisite: 220 A, B or 220.

410-3 Conservation Biology. An introduction to patterns of global biodiversity and threats to that diversity. Course emphasizes how principles from numerous biological disciplines are involved in conserving and managing biodiversity, and how social, economic and political factors affect conservation strategies. Prerequisite: Biology 307.

411-3 Environmental Risk Assessment. Risk assessment can be defined as the process of assigning magnitudes and probabilities to the adverse effects of human activities or natural catastrophes. The risk assessment process involves issues such as global climate change, habitat loss, acid rain deposition, reduced biological diversity, and the ecological impacts of pesticides and toxic chemicals. It uses measurements, testing, and mathematical models to quantify relationship between the initiating event and the effects. This course will include an overview of the basic framework for conducting an ecological risk assessment, and a general discussion of individual case

Dissertation. Students must prepare and defend a dissertation based on the results of original research. The nature of the research is developed by the student in consultation with the advisor and advisory committee. Students must register for at least 24 hours of ZOOL 600 Research and Dissertation (only 6 hours are permitted prior to candidacy). The dissertation is evaluated by the advisory committee.

Final Examination. With the approval of the advisory committee, the candidate requests the Director of Graduate Studies to schedule a dissertation defense. The defense consists of a presentation of dissertation results in a public seminar, followed by a closed session of oral evaluation of the student's dissertation research by the advisory committee. A final version of the dissertation must be approved by the advisory committee, the Director of Graduate Studies, the Department Chair, and the Graduate School.

Graduation. Ph.D. candidates must follow all Graduate School procedures in applying for graduation and deposit one bound copy of their dissertation with the department.

studies involving several important environmental issues. This is a good introductory class for a student interested in assessing the effects of various stressors on environmental health. Prerequisite: 220, Biology 307 and Chemistry 340 or equivalent, or instructor's permission.

413-4 The Invertebrates. Structure, phylogeny, distinguishing features and habitats of the invertebrates. Two lectures and two 2-hour laboratories per week. Laboratory/field trip fee: \$15. Prerequisite: 220a or 220.

414-4 Freshwater Invertebrates. Taxonomic groups, identification, distribution and habitats of the North American freshwater invertebrate fauna. Two lectures, two 2-hour laboratories per week. Laboratory/field trip fee: \$15. Prerequisite: 220a or 220.

415-3 Limnology. Lakes and inland waters; the organisms living in them, and the factors affecting these organisms. Two lectures per week and one four-hour laboratory alternate weeks. Laboratory/field trip fee: \$15. Prerequisite: 220a or 220.

418-5 Comparative Vertebrate Anatomy. The comparative structure and evolution of vertebrate organ systems. Two lectures and three 2-hour laboratories per week. Laboratory/field trip fee: \$30. Prerequisite: 220B or 220.

421-4 Histological Techniques. Methods of preparing animal tissue for microscopic study and learn theories of staining and histochemistry. One lecture and two three-hour laboratories per week. Offered Fall term. Prerequisite: ten semester hours of biological science.

426-3 Comparative Endocrinology. Comparison of mechanisms influencing hormone release, hormone biosynthesis and the effects of hormones on target tissues. Include ablation and histology of glands and chemical and bio-assays with vertebrates and invertebrates. Two lectures and one two-hour laboratory per week. Prerequisites: 220 A, B or 220. Laboratory/field trip fee: \$15

433-6 A, B (3,3) Comparative Physiology. Variations of physiological processes in animal phyla, comparison with

human physiology, and physiological adaption to environmental variation. (a) Review of basic physiology principles and comparative aspects of mechanism and function. (b) Comparative physiology and environmental adaption; mechanisms of coping with environmental variation. Prerequisites: (a) One year of biological science (b) ZOOL 433a, PHSL 433a, or equivalent.

435-3 Plant-Insect Interaction. Plants and insects have played major roles in influencing each other's evolutionary diversification. This course will be an evolutionary and ecological examination of the interactions between plants and insects. Topics will include herbivory, pollination relationships, ant-plant mutualisms, host plant choice, specialized vs. generalized relationships, seed and fruit dispersal, co-evolution/cospeciation, and chemical ecology. Prerequisite: Biology 200a, b or equivalent; Biology 307 or equivalent.

440-3 Wildlife Nutritional Ecology. This course will provide an understanding of basic nutritional principles (including foraging, digestion, absorption, metabolism, and requirements), demonstrate their application to ecological relationships of wild terrestrial vertebrates with their environment, and stimulate students to critically evaluate published literature in this field of study. Two lectures and one discussion hour each week. Prerequisites: ZOOL220, CHEM 340, or CHEM 350.

441-3 Evolutionary Ecology. An overview of how phenotypic variation in organisms is optimized and constrained by ecological and evolutionary factors. Material drawn from perspectives of life history, behavioral ecology, and population and community ecology. Overview of the theoretical frameworks and case studies of major areas in evolutionary ecology. Prerequisites: BIOL 307, ZOOL 304. Recommended: MATH 141.

445-4 Wetland Ecology and Management. This course provides students with experience in wetland ecology and management with an emphasis on wetland functioning, field sampling, and identification of common wetland plants. Lab Fee: \$25. Prerequisite: either BIOL 200 or PLB 200; and BIOL 307; or consent of instructor. Two lectures and one 4-hour lab per week. Same as PLB 445.

450-3 Genome Evolution. This course introduces the diversity of genomes and the evolutionary forces shaping them. Molecular evolution from the level of single nucleotides to whole genomes will be covered. Prerequisites: Consent of instructor or BIO 305 and ZOO 304.

458-3 Issues in Aquatic Ecology. With its primary focus on freshwater ecosystems, this course will cover important issues in aquatic ecology including: surface water and groundwater quality, global warming, use of fish hatcheries, exotic species, genetically manipulated organisms, stream habitat degradation, dams, diversions, the Great Lakes, local issues. Prerequisite: Biology 307 or consent of instructor.

460-2 Upland Game Birds. Biological overview and identification of upland and shoreline game birds plus raptors and selectively-managed species. One lecture and one two-hour laboratory per week; there will be up to two Sat-

urday field trips. Laboratory/field trip fee: \$10. Prerequisite: 220B or 220 or consent of instructor.

461-3 Mammalogy. Taxonomic characteristics, identification, and natural history of mammals. Two one-hour lectures and one two-hour laboratory per week. Laboratory/field trip fee: \$10. Prerequisite: 220B or 220.

462A-2 Waterfowl Ecology and Management. This class will explore the pertinence of basic life history theory and ecological principles to waterfowl management. Lecture topics include but are not limited to waterfowl life histories (i.e. productivity and mortality), foraging ecology, nutrition, habitat use, habitat management, migration, and the influence of harvest. Prerequisites: ZOOL 220, BIOL 307, or consent of instructor.

462B-1 Waterfowl Ecology and Management (laboratory). This laboratory will meet one day/week for two hours. The primary objective will be waterfowl identification with a secondary emphasis on wetland plant identification and field techniques in waterfowl research and management. There will be 2-3 Saturday field trips. Laboratory/field trip fee: \$10. Prerequisites: none

463-3 Game Mammals. Natural history and management. Two lectures and one two-hour laboratory per week. Laboratory/field trip fee: \$10. Prerequisite: 220B or 220 or consent of instructor.

464-3 Wildlife Administration and Policy. Responsibilities of private, state, and federal natural resources management agencies. Legal and political processes in areas of wildlife and natural resources. Three lecture per week. Prerequisite: consent of instructor.

465-3 Ichthyology. Taxonomic groups, identification, and natural history of fishes. Two lectures and one two-hour laboratory per week. Laboratory/field trip fee: \$10. Prerequisite: 220B or 220.

466-3 Fish Management. Sampling, age and growth, dynamics, habitat improvement, manipulation of fish populations, and management of freshwater and marine fish stock. Two lectures per week and one four-hour laboratory alternate weeks. Offered Fall term. Prerequisite: ten hours of biological science or consent of instructor.

467-3 Ornithology. Classification and recognition of birds and the study of their songs, nests, migratory habits and other behavior. One lecture and one four-hour laboratory per week. Laboratory/field trip fee: \$10. Prerequisite: 220B or 220.

468-3 Wildlife Biology Principles. Basic concepts of wildlife ecology and management. Includes lectures on ecological physiology, population dynamics and wildlife management strategies. Prerequisite: Biology 307 and seven other semester hours of biological science.

469-3 Wildlife Techniques. Field-oriented course with instruction in techniques for management of wild species and their habitat. One 1 1/2-hour lecture and one 3-hour laboratory per week, two of which may be field trips on Saturdays. Laboratory/field trip fee: \$30. Prerequisite: 220 A, B or 220.

471-4 Entomology. Structure, classification, and life histories of insects. Two lectures and two 2-hour laboratories

per week. Laboratory/field trip fee: \$10. Prerequisite: 220a or 220.

473-4 Aquatic Entomology. Structure, classification and biology of aquatic insects. Two lectures and two 2-hour laboratories per week. Laboratory/field trip fee: \$10. Prerequisite: 220a or 220.

477-3 Aquaculture. Production of game, food and bait fishes. Design of facilities, chemical and biological variables, spawning techniques, diseases and nutrition. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: ten hours of biological science or consent of instructor.

478-3 Animal Behavior. Biological basis of the behavior of animals. Two lectures and one two-hour laboratory per week. Offered Fall semester. Prerequisite: one year of biological science or permission of instructor.

485-2 to 4 Special Topics in Zoology. Examination of topics of special interest not available in other departmental courses. Offered in response to student need and faculty availability. Prerequisite: consent of instructor.

496-2 to 4 Zoology Field Studies. A trip of four to eight weeks to acquaint students with animals in various environments and with methods of field study, collection, and preservation. Prerequisite: consent of department.

500-3 Genome Evolution. (Same as Plant Biology 504) This course introduces the diversity of genomes and the evolutionary forces shaping them. Molecular evolution from the level of single nucleotides to whole genomes will be covered. Prerequisite: consent of instructor.

510-3 Evolutionary Biology. An introductory survey of evolutionary biology at the graduate level, emphasizing conceptual issues in evolutionary genetics, adaptation, systematics, and macroevolution. Prerequisite: Biology 305 or equivalent.

520-3 Advanced Invertebrates. The nature and life of invertebrate animals with emphasis on comparative form, function, behavior and occurrence. Three two-hour meetings per week. Prerequisite: consent of instructor.

521-3 Stream Ecology. The physical, chemical, and biological factors affecting organisms in streams. Two lectures per week and one four-hour laboratory alternate weeks. Prerequisite: 415 and consent of instructor.

523-3 Watershed Science. (Same as Plant Biology 523) This course is part the SIU IGERT program and will focus on ecological, geomorphic, and hydrological concepts related to watersheds including hydrograph generation, frequency analysis, erosional and depositional processes, channel geomorphology, water quality and biotic integrity, and structure and function of stream ecosystems. This course will include readings and discussions and will feature guest lecturers from on specific topics. Restricted to graduate students (masters and doctoral).

530-3 Wildlife Diseases. Introduction to the causes and nature of diseases of wildlife with emphasis on wild mammals and birds. The relationship of disease to the population ecology of species will be emphasized further. Two lectures and one two-hour laboratory per week. Offered Spring term. Prerequisite: consent of instructor.

532-3 Wildlife Toxicology. Fate and effects of environmental toxicants in wildlife. Review of descriptive and mechanistic toxicology for environmental contaminants. Investigation of the relationship between individual and community responses to toxicant exposure. Examination of current hazard assessment protocols and associated regulatory agencies. Prerequisite: 468a or consent of instructor.

533-4 Aquatic Toxicology. This course will provide an overview of concepts and methodology for conducting tests in the field of aquatic toxicology. Specific topics to be covered include: acute and chronic bioassays, bioaccumulation tests including biotransformation processes and toxicokinetics, and modeling techniques using Quantitative Structure Activity Relationships and fugacity modeling. This class is recommended for students interested in learning about the applied methodology used in the rapidly evolving field of aquatic toxicology. Prerequisite: Biology 307 and Chemistry 340 or equivalent, or instructor's permission.

534-3 Wildlife Habitat Analysis. Physical, biological and behavioral factors that influence habitat use and selection by wild vertebrate populations. Landscape level analysis of wildlife habitats. Modeling habitat suitability, environmental impact and wildlife population dynamics with habitat data. Application and use of remote sensing and geographic information systems in natural resource management and habitat evaluation. One two-hour lecture and one two-hour laboratory per week. Prerequisite: consent of instructor.

554-1 to 4 (1 per semester) Evolution Seminar. (Same as Anthropology 554, Molecular Biology, Microbiology and Biochemistry 554, Plant Biology 554) Advanced topics in evolutionary biology including genetics & development, evolutionary ecology, phylogeny, paleontology, biogeography, population genetics, molecular ecology, speciation, molecular evolution, and macroevolution. Topics will vary each semester. Seminar format with group discussions and student presentations. Graded S/U. Prerequisite: consent of instructor.

556-3 Phylogenetics. (Same as ANTH 556, MBMB 556, and PLB 554) An advanced introduction to modern methods of phylogenetic inference, emphasizing both theoretical background concepts and numerical approaches to data analysis. Topics include properties of morphological and molecular characters, models of character evolution, tree estimation procedures, and tree-based testing of evolutionary hypotheses. Prerequisite: consent of instructor.

557-4 Biostatistics. (Same as Plant Biology 557) Basic biostatistics procedures used by researchers in life sciences and related fields. Topics include descriptive statistics, probability and distributions, statistical models, likelihood methods, experimental design, analysis of variance, regression, correlation, and the use of statistical software.

558-4 Advanced Biostatistics. (Same as Plant Biology 558) Advanced biostatistical procedures used by researchers in life sciences and related fields. Topics include multiple and logistic regression, randomization tests, jackknife and bootstrap, Mantel tests, BACI designs, MANOVA, repeated measures analysis and the use of statistical software. Prerequisite: 557, Plant Biology 557 or equivalent.

564-1 to 2 Aquaculture Techniques. Practical experience in aquaculture techniques. Course consists of modules which require student participation in hands-on experience, (e.g., spawning, induction of spawning, production of fry, operation and grading, diagnosis and treatment of parasites and diseases, and transporting of fish). One credit for completion of two modules. Register any semester, one year to complete elected number of modules. Written report and examination required for each module. Cost incurred by student varies with modules selected. Prerequisite: 477 or consent of instructor.

565-3 Environmental Physiology of Fish. Synthesis of effects of pollutants on physiological processes of fish. Course begins with an overview of fish physiology. Topics include: concepts, methods, and measurements in aquatic toxicology; histopathological, physiological, and behavioral responses to pollutants; and toxicity of heavy metals, organics, particulates and other pollutants. Three lectures per week. Prerequisite: 465 or consent of instructor.

568-2 Fish Stock Assessment. Methods of characterizing fish populations including mortality rates, age growth analysis, population sampling, yield models, habitat evaluation procedures and creel survey techniques. Two one-hour meetings per week. Prerequisite: 466 or consent of instructor.

569-3 Advanced Fisheries Management. Advanced topics related to the management of fisheries including urban fisheries, native American fisheries, freshwater commercial fisheries, Great Lakes fisheries, impact of power generating plants on fishes, and in-depth consideration of indices of community structure and current topics in fish management. Three lectures per week. Prerequisite: 466 or consent of instructor.

570-3 Advanced Aquaculture. Special topics in aquaculture and practical methods for the production of coldwater, coolwater, warmwater, and tropical aquatic species. Three lectures per week and one weekend field trip. Prerequisite: 477 or equivalent.

573-3 Physiological Ecology. The role of physiological, morphological, and behavioral adaptations and adjustments in the ecology of vertebrate organisms with special emphasis on examining the energy balance and environment as it influences vertebrate ecology. Two hours of lecture and one two-hour laboratory. Prerequisite: Biology 307 or equivalent, and consent of instructor.

577-2 Population Ecology. Principles of population dynamics as related to animals. Two lectures per week. Prerequisite: consent of instructor.

578-3 Population Genetics. (Same as Plant Biology 578) Genetic structure of populations, factors causing changes and principles governing rate and direction of change. Three lectures per week. Prerequisite: 304 or equivalent and Biology 305 or equivalent.

579-3 Molecular Genetics Techniques. Practical experience in molecular genetics techniques currently used in zoology for population genetic analysis and for molecular systematics. Emphasis will be on methods for allozyme, mtDNA and nuclear DNA analysis. Class projects will focus

on experimental design, data collection and analysis. Prerequisite: consent of instructor.

580-1 Current Topics in Evolution. (Same as Anthropology 580, Molecular Biology, Microbiology and Biochemistry 580) The Evolution Discussion Group meets weekly throughout the year to discuss current evolutionary literature and the research of participants. All students and faculty with an interest in evolutionary biology are welcomed to participate.

581-2 Zoological Literature. Diversity and functions of zoological literatures, scientific writing and the publication process. Two lectures per week. Prerequisite: graduate status in a biological science.

582-1 to 4 (1,1,1,1) Graduate Zoology Seminars. Special topics in zoology. Consult department for each semester's topic. One meeting per week. Prerequisite: consent of instructor and department.

584-3 Genetics for Fisheries and Wildlife Management. Principles of genetics and their applications for fishery management, wildlife management, and aquaculture. Includes and overview of classical, molecular, population and quantitative genetics leading to an understanding of how managers can conserve genetic diversity and evolutionary potential of natural and captive populations. Prerequisite: Biology 305 or consent of instructor.

585-36 (3 per topic) Seminar. Advanced study of special topics in zoology. (a) Seminar in animal behavior. (c) Seminar in ecosystems. (d) Seminar in wetland ecology. (e) Seminar in wildlife ecology: impact of land use. (f) Seminar in fish biology. Survey of fish biology and ecology dealing largely with topics not covered in 465. Life history strategies, physiology and other fundamental biological features of fishes will be covered in some depth. Prerequisite: 465. (g) Seminar in parasitology. (h) Seminar on the amphibia. (j) Seminar in developmental biology. Detailed coverage of current topics of interest in developmental biology; the course will emphasize interacting systems in the development of both vertebrates and invertebrates, from the molecular to the tissue levels. Prerequisite: 300, Biology 309, or equivalent. (z) Seminar in selected topics. Prerequisite: consent of instructor or department.

586-1 Fisheries Seminar. Contemporary topics, literature, and oral and written communication in fisheries science. Enrollment required for zoology graduate students specializing in fisheries science for all fall and spring semesters until degree requirements are completed, unless exempted by the student's academic advisor. Only one 586 credit hour, however, may be used to satisfy degree requirements. One meeting per week.

587-3 Community Ecology. This course focuses on a search for pattern in the structure, composition and dynamics of ecological communities. We will examine similarities and differences in composition or structure of ecological communities to try to establish what factors may determine or constrain their organization in time and space. This course complements material presented in 577. Prerequisite: Biology 307 or equivalent.

588-1 Wildlife Seminar. Contemporary topics, literature, and oral and written communication in wildlife ecology. Enrollment required for zoology graduate students specializing in wildlife ecology for all Fall and Spring semesters until degree requirements are completed, unless exempted by the student's academic advisor. Only one 587 credit hour, however, may be used to satisfy degree requirements. One meeting per week.

589-1 to 2 (1, 1) Zoology Colloquium. Regularly scheduled presentations by invited seminar speakers on topics of current research interest in Zoology. Graded S/U. Only two credits of 589 may be used to satisfy degree requirements. Restricted to graduate students in Zoology.

593-1 to 12 Individual Research. Investigation in zoology other than those for theses. Only three hours may be credited toward a degree. Some costs may be borne by the student.

596-1 to 66 (1 to 12 per semester) Research. Graded S/U only. Credit may not be used toward a degree in Zoology. Prerequisite: consent of instructor.

597-1 to 12 Advanced Zoological Techniques. Individualized techniques or experimental procedures to prepare for dissertation research. May be taken at another university. Number of credits determined by committee. Graded on S/U basis following final report submitted to major adviser. Prerequisite: admission to Ph.D. degree program in Zoology and consent of major adviser.

598-1 to 6 Research Paper. Research paper for Master of Science degree for Biological Sciences major. Some cost may be borne by the student. Graded S/U only. Prerequisite: consent of instructor.

599-1 to 12 Research and Thesis. Thesis for Master of Science degree. Only six hours may count toward the degree. Some cost may be borne by student. Graded S/U only. Prerequisite: consent of instructor.

600-1 to 32 (1 to 16 per semester) Research and Dissertation. Research and dissertation for Doctor of Philosophy degree. Some cost may be borne by student. Graded S/U only. Prerequisite: consent of instructor.

601-1 per semester Continuing Enrollment. For those graduate students who have not finished their degree programs and who are in the process of working on their dissertation, thesis, or research paper. The student must have completed a minimum of 24 hours of dissertation research, or the minimum thesis, or research hours before being eligible to register for this course. Concurrent enrollment in any other course is not permitted. Graded S/U or DEF only.

Other Graduate Faculty

Some faculty listed below may not be directly affiliated with a graduate program but have been awarded graduate faculty status to perform certain functions at the graduate level. These individuals are arranged according to their unit affiliation.

The first of the two dates listed with the name of a faculty member indicates the year in which the highest degree was earned; the second date indicates the year when the person first became a faculty member at Southern Illinois University Carbondale.

COLLEGE OF APPLIED SCIENCES AND ARTS

Beebe, Sandra, Senior Lecturer, Ph.D., Southern Illinois University Carbondale, 2003; 2000. Dental hygiene, elderly access to care and oral health issues.

Bleyer, Dorothy R., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1977; 1957.

Davis, Diane, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1990; 1976.

Davis, Joan Mary, Associate Professor, M.S.Ed., Southern Illinois University Carbondale, 1983; 1996. Periodontics, faculty development, tobacco education, occupational health and safety, emergency preparedness, and infection control.

Debeljuk, Luciano, Assistant Professor, M.D., University of Buenos Aires School of Medicine, 1962; 1988. Health care professions.

DeMattei, Ronda, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2006; 1982. Oral issues in children with an autism spectrum disorder and access to oral care for children with special needs.

DiCocco, Margaret, Assistant Professor, M.S., University of Texas at San Antonio, 1998; 2009.

Evans, Candy, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1992; 1980.

Gonzenbach, Nancy, Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1990; 1975.

Grace, Linda, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1985; 1981.

Grey, Michael, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2009; 2004. Magnetic Resonance Imaging/Computed Tomography.

Having, Karen M. Associate Professor, M.S., Southern Illinois University Carbondale, 1996; 1998. Diagnostic Medical Ultrasound.

Isberner, Fred R., Professor, Ph.D., *Emerita*, Southern Illinois University Carbondale, 1984; 1985.

Kaps, Robert, Associate Professor, Ph.D., SIUC, 1996; 1991. Advanced technical studies.

Lautar, Charla, Associate Professor, Ph.D., University of Calgary, Alberta, Canada, 1993; 1995. Ethic and professionalism, access to oral health care and service-learning.

Liu, Echu, Assistant Professor, Ph.D., University of Southern California, 2006; 2006.

Maurizio, Sandra, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2004; 1989. Dental hygiene, oral and pharyngeal cancers, and access to care for underserved populations.

McKinnies, Richard C., Assistant Professor, M.S. Ed., Southern Illinois University Carbondale, 2006; 2006. Radiation Oncology.

NewMyer, David A., Associate Professor, Ph.D., Southern Illinois University Carbondale, 1987; 1977. Aviation management and flight.

Pfister, Regina, Assistant Professor, M.S., Southern Illinois University Carbondale, 2002; 2008. Dental hygiene.

Rehwaltdt, Susan, Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1982; 1987.

Rivers, Patrick, Professor, Ph.D., University of Alabama, 1997; 2004. Health care management.

Rodriguez, Charles L., Assistant Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1997; 1977.

Rogers, Janet, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1995; 1977. Physical therapy.

Ruiz, Jose R., Associate Professor, Ph.D., Southern Illinois University Carbondale, 2003; 1995. Air traffic control, national airspace system, aviation safety management, aviation career development.

Sarvela, Paul D., Professor and *Vice President*, Ph.D., University of Michigan, 1984; 1986. Strategic planning and needs assessment, program evaluation, community health and epidemiology.

Shaw, Thomas, Associate Professor, Ph.D., Southern Illinois University Carbondale, 2005; 1995. Mortuary science and funeral service.

Sherry, Jennifer, Assistant Professor, M.S., Southern Illinois University Carbondale, 2004; 2000. Clinical dental hygiene, radiology.

Soderstrom, Harry, Professor, *Emerita*, M.S., Bradley University, 1952; 1962.

Smith, Sidney, Associate Professor, M.D., Northwestern University School of Medicine, Chicago, 1966; 1972.

Stitt, Beverly, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1980; 1982.

Troutt-Ervin, Eileen, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1986; 1976.

Vitello, Elaine M., Professor *Emerita*, Ph.D., Southern Illinois University Carbondale, 1977; 1977.

LIBRARY AFFAIRS

Bauner, Ruth E., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1978; 1956.

Black, George W., Jr., Professor, *Emeritus*, M.S.L.S., Columbia University, 1966; 1968.

Brown, F. Dale, Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1978; 1970.

Carlson, David H., Professor and *Dean of Library Affairs*, M.L.S., University of Michigan, 1979; 2001

Cox, Shelley M., Associate Professor, *Emeritus*, M.A.L.S., University of Chicago, 1973; 1973.

Fox, James W., Assistant Professor, *Emeritus*, M.L.S., University of North Carolina, 1975; 1975.

Harwood, Judith A., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1981; 1969.

Hostetler, Jerry, Assistant Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1977; 1968.

Kilpatrick, Thomas L., Professor, *Emeritus*, Ph.D., Vanderbilt University, 1982; 1964.

Koch, David V., Associate Professor, *Emeritus*, M.A., Southern Illinois University Carbondale, 1963; 1959.

Logue, Susan, Associate Professor and *Interim Associate Provost for Academic Administration*, M.S.L.I.S., University of Illinois, 1994; 1995.

Matthews, Elizabeth W., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1972; 1964.

Person, Roland C., Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1982; 1970.

Peterson, Kenneth G., Professor, *Emeritus*, Ph.D., University of California, Berkeley, 1968; 1976.

Russell, Thyra K., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1987; 1972.

Snyder, Carolyn A., Professor, *Emeritus*, M.L.S., University of Denver, 1965; 1991.

Stubbs, Walter R., Associate Professor, *Emeritus*, Ph.D., Southern Illinois University Carbondale, 1983; 1968.

SCHOOL OF MEDICINE

CARBONDALE AND SPRINGFIELD CAMPUSES

Chavez, Daniel J., Associate Professor, *Emeritus*, Ph.D., Colorado State University, 1979; 1981.

Clough, Richard W., Associate Professor, Ph.D., University of Nebraska, Medicine, 1983; 1987.

DiLalla, Lisabeth, Associate Professor, Ph.D., University of Virginia, 1987; 1992.

Dorsey, Kevin, Clinical Professor and *Dean and Provost*, Ph.D., University of Wisconsin-Madison, 1968; M.D., Southern Illinois University Springfield, 1978; 1999.

Estavillo, Jaime A., Professor, *Emeritus*, Ph.D., University of California, 1970; 1975.

Evans, Miles S., Associate Professor, M.D., M.S., University of Louisville School of Medicine, 1982; 1990.

Folse, J. Roland, Professor, *Emeritus*, M.D., Johns Hopkins University, 1958; 1971.

Henry, Paul, Associate Professor, Ph.D., Southern Illinois University Carbondale, 1992; 1969.

Jackson, Evelyn W., Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1975; 1977.

Jackson, Robert W., Professor, *Emeritus*, Ph.D., Purdue University, 1963; 1974.

Khardori, Nancy, Professor, M.D. Government Medical College-India, 1972; 1989.

Khardori, Romesh, Professor, M.D. Government Medical College-India, 1972; 1981.

Koschmann, Timothy, Associate Professor, Ph.D., Illinois Institute of Technology, 1987; 1988.

Lacey, Ella, Associate Professor, *Emerita*, Ph.D., Southern Illinois University Carbondale, 1979; 1972.

Parr, Earl L., Professor, *Emeritus*, Ph.D., Rockefeller University, 1968; 1981

Parr, Margaret, Professor, *Emerita*, Ph.D., Columbia University, 1966; 1978.

Rose, Gregory,

Shea, Sandra, Associate Professor, Ph.D., Vanderbilt University, 1980; 1988.

Travis, Terry, Professor, *Emeritus*, M.D., Kansas University, 1964; 1972.

Zook, Elvin G., Professor, *Emeritus*, M.D., Indiana University, 1963; 1973

Other Graduate Courses

The 400- and 500-level courses listed below are offered by Southern Illinois University Carbondale for graduate credit, but they are not linked to a specific department.

AGRICULTURE

Courses (AGRI)

401-3 Fundamentals of Environmental Education. (Same as Forestry 401 and Recreation 401.) A survey course designed to help education majors develop an understanding of environmental education principles and teaching both inside and outside the classroom. Requires field trip transportation fee not to exceed \$25 per course registration. Prerequisite: ten hours of biological science or ten hours of recreation and/or education, or consent of instructor.

423-3 Environmental Interpretation. (Same as Forestry 423 and Recreation 423.) Principles and techniques of natural and cultural interpretation. Two hours lecture, three hours laboratory. Requires field trip transportation fee not to exceed \$40 per course registration. Prerequisite: ten hours biological science or ten hours of recreation.

450-2 Farming Systems Research and Development. An introduction to farming systems, which is an interdisciplinary approach to agricultural research and development emphasizing small farms. The whole farm is viewed as a system of interdependent components controlled by the farm household. Focuses on analyzing interactions of these components as well as the physical, biological and socioeconomic factors not controlled by the household. Techniques of analysis are applicable domestically and internationally.

481-1 International Agricultural Seminar. Discussion of special topics relating to worldwide agricultural development. Prerequisite: consent of instructor.

ENGINEERING TECHNOLOGY

Courses (ET)

There is no graduate program offered through engineering technology. See manufacturing systems for graduate program description. Four-hundred-level courses in this listing may be taken for graduate credit unless otherwise indicated in the course description.

The student is required to purchase photographs and maps for certain courses, and a suitable slide rule is strongly recommended for most courses. Cost is approximately \$10 to \$25.

403-8 (4,4) Electronics Technology. (a) Fundamental theory and operation of semiconductor diodes and bipolar transistors, incremental models for transistors, biasing, stability, and feedback of single and multistage amplifiers. Parameters and applications of field-effect transistors, opto-electronic devices, thyristors, unijunction transistors and amorphous semi-conductors. Laboratory. (b) Parameters and applications of operational amplifiers, linear integrated circuits, monolithic voltage regulators, and digital integrated circuits. Laboratory. Must be taken in a,b sequence. Prerequisite: 304b, 403a.

413-4 Field Survey Problems. Perform extensive field projects in the areas of engineering, hydrographic, land and control surveying. To be held at Crab Orchard National Wildlife Refuge. Course must be taken concurrently with 414. Prerequisite: 263 and one of 361, 362 or 363.

414-2 Field Project Planning and Computations. Planning, organization, computations, and drafting of field survey projects including the needed mapping utilizing calculators, computers, and CAD. This course must be taken concurrently with 413. Prerequisite: 263 and one of 361, 362 or 363.

426-5 (3,2) Photogrammetry. (a) Cameras and photography; flight planning; mathematical principles of vertical and tilted aerial photographs; ground control methods; extension of control; stereoscopy and parallax; basic instruments, stereo plotters, and latest developments. Laboratory. Prerequisite: 263 or consent of instructor. (b) Rectification of tilted photographs; stereoscopic plotting instruments; principles and use of oblique photography; analytic photogrammetry and new concepts. Laboratory. Prerequisite: 426a or consent of instructor.

437-8 (4,4) Communications Systems Technology. (a) Theory and applications of radio frequency transmission lines, waveguides, optical fibers, wave propagation, and antennas. Laboratory. Prerequisite: 304b. (b) Theory and applications of analog and digital communications systems. Laboratory. Prerequisite: 403a, 437a.

438-8 (4,4) Continuous and Digital Control Systems. (a) Fundamentals of continuous control systems; equation of electrical, hydraulic and thermal systems; application of Laplace transforms, transfer functions, block diagrams, and flow graphs. Computer implemented graphical analysis

and design methods: root locus, frequency response. Nyquist diagrams and compensator design. Continuous systems laboratory. Prerequisite: 304b. (b) Fundamentals of digital control systems, Stepper motors, digital data acquisition and interface components, Fourier transforms, Z transforms, and applications of fast Fourier transform. Digital control laboratory. Prerequisite: 438a.

439-4 Microprocessor Applications and Hardware. A study of microprocessor applications and hardware based on microprocessor manufacturer's literature. System configuration, hardware, requirements, typical instruction set, programming, input/output techniques, interfaces and peripheral devices. Prerequisite: 238.

445-3 Computer-Aided Manufacturing. (Same as Industrial Technology 445) Introduction to the use of computers in the manufacturing of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209, and computer programming.

455-3 Industrial Robotics. (Same as Industrial Technology 455) Study of industrial robots and their applications; pendant and numerical programming of robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation and management of robotic systems. Prerequisite: 445.

INDUSTRIAL TECHNOLOGY

Courses (IT)

There is no graduate degree program offered through industrial technology. See Manufacturing Systems for graduate program descriptions.

425-3 Advanced Process Design and Control. Extension of other process courses offered. Meets the need of those students who enter the field of manufacturing by giving more emphasis on planning, estimating and control of industrial processes. Laboratory. Prerequisite: 208, 209.

430-3 Health and Injury Control in A Work Setting. (Same as Health Education 430.) Assesses the health and injury control programs present in a work setting. Emphasis given to employee programs in health, wellness and injury control that are effective. Field trips to work sites are included.

440-3 Manufacturing Policy. Review of all areas covered by the industrial technology program. Includes problems which simulate existing conditions in industry. Students present their solutions to the class and to the instructor in a formal manner. Prerequisite: 358, 375, 382 and 475.

445-3 Computer-Aided Manufacturing. (Same as Engineering Technology 445) Introduction to the use of computers in the manufacture of products. Includes the study of direct and computer numerical control of machine tools as well as interaction with process planning, inventory control and quality control. Laboratory. Prerequisite: Engineering Technology 103 or Industrial Technology 105, Industrial Technology 208 or Engineering Technology 209, and computer programming.

450-3 Project Management I. This course is designed to provide students with an overview of the project management process followed by an in-depth examination of the activities needed to successfully initiate, plan, schedule, and control the time and cost factors of the project. Prerequisite: IT375, 382, 392, or consent of instructor.

455-3 Industrial Robotics. (Same as Engineering Technology 455) Study of industrial robots and their applications; pendant and numerical programming of

robots. Robotics design including tactile and visual sensors. Technical and psychological problems of justification, installation and management of robotic systems. Prerequisite: 445.

465-3 Lean Manufacturing. This course will cover the principles and techniques of lean manufacturing. Major topics covered include lean principles, 5S, value stream mapping, total productive maintenance, manufacturing/office cells, setup reduction/quick changeover, pull system/Kanbans, continuous improvement/Kaizen, lean six sigma, lean simulation, and other modern lean manufacturing techniques and issues.

470A-3 Six Sigma Green Belt. Study the knowledge areas of Six Sigma Green Belt. Topics include six sigma goals, lean principles, theory of constraints design for six sigma, quality function deployment, failure mode and effects analysis, process management, team dynamics, project management basics, data and process analysis, probability and statistics, measurement system analysis, and process capability.

470B-3 Six Sigma Green Belt. Study the knowledge areas of Six Sigma Green Belt. Topics include exploratory data analysis, correlation and regression, hypothesis testing, single-factor ANOVA, design of experiments basics, implement and validate solutions, statistical process control, and control plans. Prerequisite: IT470A, or consent of instructor.

475-3 Quality Control. Study the principles and techniques of modern quality control practices. Topics include total quality management, fundamentals of statistics, control charts for variables and other quality related issues and techniques. Prerequisite: senior standing.

480-3 Six Sigma Black Belt. Study the knowledge areas of Six Sigma Black Belt. Topics include analysis of vari-

ance, fractional factorial experiments, Taguchi robustness concepts, response surface methodology, robust design and process, and other advanced six sigma principles and techniques. Prerequisite: IT470A, B, or consent of instructor.

485-3 Quality Control II. Study the principles and techniques of modern quality control practices. Topics include fundamentals of probability, control charts for attributes, acceptance sampling systems, reliability and other quality related issues and techniques. Prerequisite: senior standing.

490-3 Six Sigma. Six Sigma is a data-driven management system with near-perfect-performance objectives that has been employed by leading corporations. Its name is derived from the statistical target of operating with no more than 3.4 defects per one million chances, but its principles can be applied in business of all types to routinely reduce costs and improve productivity. This overview describes what Six Sigma is, and what its techniques and tools are. Prerequisite: 475.

MEDICAL EDUCATION PREPARATION

No graduate degree program is offered through medical education preparation. Four-hundred-level courses may be taken for graduate credit only with written permission of the relevant department and the graduate dean.

SCIENCE

Courses (SCI)

500-2 Science Information Sources. Methods and procedures to efficiently exploit the scientific literature are discussed. The two-hour class discussion will be supplemented by practical exercises in library usage. Prerequisite: consent of instructor.

501-4 (2,2) Research Transmission Electron Microscopy. (a) Theory of design of electron microscope, lenses, vacuum systems, alignment, specimen preparation and darkroom. (b) Practical experience in use of transmission electron microscope and specimen preparation.

502-4 (2,2) Research Scanning Electron Microscopy. (a) Theory of design for scanning electron microscope, lenses, vacuum systems, alignment, specimen preparation for biologists and materials scientists, darkroom. (b) Laboratory practical experience in use of scanning electron microscope and specimen preparation. Laboratory fee \$100.

503A-1 to 3 Science for Elementary School Teachers. In-depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include cells and simple organisms, characteristics of vertebrates, plate tectonics, solar system, nature of matter and magnetism. Prerequisite: currently teaching in an elementary school.

503B-1 to 3 Science for Elementary School Teachers. In depth studies of selected basic concepts in general science for teachers of upper-level elementary grades. Topics include human biology, characteristics of high plants, Earth's building blocks, the atmosphere, forces and simple machines. Prerequisite: currently teaching in an elementary school.

504-9 (1 to 3 per topic) Selected Topics in Science for Teachers. The course consists of selected basic concepts in general science for practicing teachers. Within a given semester a broad area is selected within either the biological sciences or the physical/earth sciences. Topics currently include: (a) Basic stream ecology; (b) Biological assessment of polluted streams; and, (c) Wetland ecosystems. Other topics may be added as deemed necessary. This course may not be used for graduate credit by College of Science majors. Prerequisite: currently teaching in an elementary school.

